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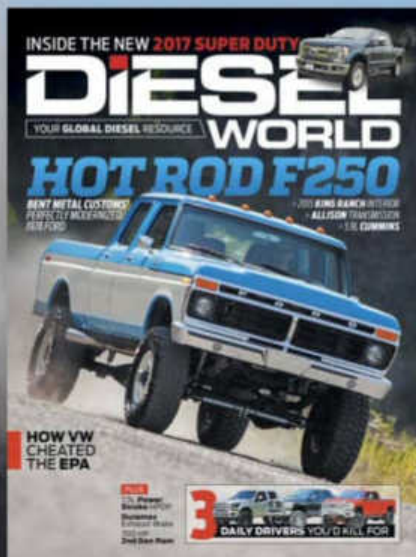
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**ON THE COVER:**  
Kip Fulks' '1977 Ford just might be the perfect vintage resto mod.

Main Photo by Anna Taylor



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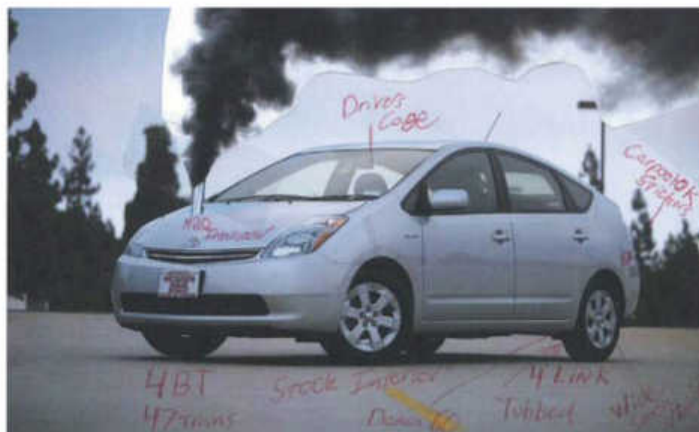


## The Diesel Prius

It's Cooler than It Sounds...

BY ADAM BLATTENBERG

Just mentioning the name "Prius" in a diesel crowd could get you in some trouble. Some say they aren't as environmentally friendly as everyone thinks they are: electricity (in the Americas) is mainly sourced from coal; the batteries could end up in a land fill where they'd then leach lead and acid into the ground water. One could also argue that due to the fact that a diesel engine will last much longer than either of the Prius' main drivetrain parts (diesel engine: up to 1 million miles; Prius batteries = 150 thousand miles; Prius engine = 250 thousand miles) that the emissions involved in the manufacturing process of parts to get the Prius to 1 million miles outweighs that of a diesel pickup, or car. Lastly, they're designed using multiple technologies to do one thing well: get good mileage. Do they really do that all that well? We just put a VW TDI (NOT a hybrid) through a real world mileage test and came back with 64 mpg highway average. Ok fine, VW cheated the EPA (see more on VW's recent debacles on p. 150) but the fact is the TDI got substantially better mileage than the Prius's claimed 48 mpg.



As much as I may enjoy a good Prius-bashing session, that was not my intention for this article. Earlier this year, I decided to start a new project, and while it's presented more problems than successes, it will get finished. I'm going to build a 4BT-powered Prius.

The idea for this project really did start as a joke thrown around at an NHRDA event. A Prius pulled into the track (assumedly on its way to a racers camp) and we all thought how funny it was to see it there surrounded by a bunch of big diesel sled pullers and purpose-built drag trucks. Sort of like a Chihuahua in a field of Pit bulls.

Someone remarked, "He should enter it in the drags!" and the bench racing began. Ripping the engine and motor out of a Prius would offer a decent amount of room to fit a smaller diesel. But the diesel would have to be an iconic early era-esque engine though, no TDIs or Kubotas here. Nothing but the 4BT came to mind. The iconic sound, as well as the healthy aftermarket backing that would make it easy to get 500 hp out of it, helped convince me that it was a project that should be done.

Fitting the 4BT wouldn't be the main problem, though. The real

work would be fitting a rear axle and transmission in the originally front wheel drive car. A whole transmission tunnel would have to be made (not that big of a deal) as well as fabricating and installing a 4-link rear suspension (a big deal). Also, doing all this work would then remove a large part of the Prius' structural support, so we'd have to build some sort of frame to stop it from tacoing at the track. Cost wouldn't be too great since the batteries fail regularly, making it cheap and easy to get a hold of an older one in need of drivetrain work. The brainstorming quickly changed to other subjects, but I couldn't get the image of an over fueled, back halfed and tubbed turbo diesel Prius running 7-second passes down the track out of my head.

So six months after we came up with the idea, I'm now actively on the hunt for a cheap, non-running Prius and a 4BT out of an old bread truck. It'll make for the perfect winter project, and I can't wait to take it down the quarter mile, laughing all the way!

-Adam

"I COULDN'T GET THE IMAGE OF AN OVER FUELED, DIESEL PRIUS RUNNING 7-SECOND PASSES DOWN THE TRACK OUT OF MY HEAD"



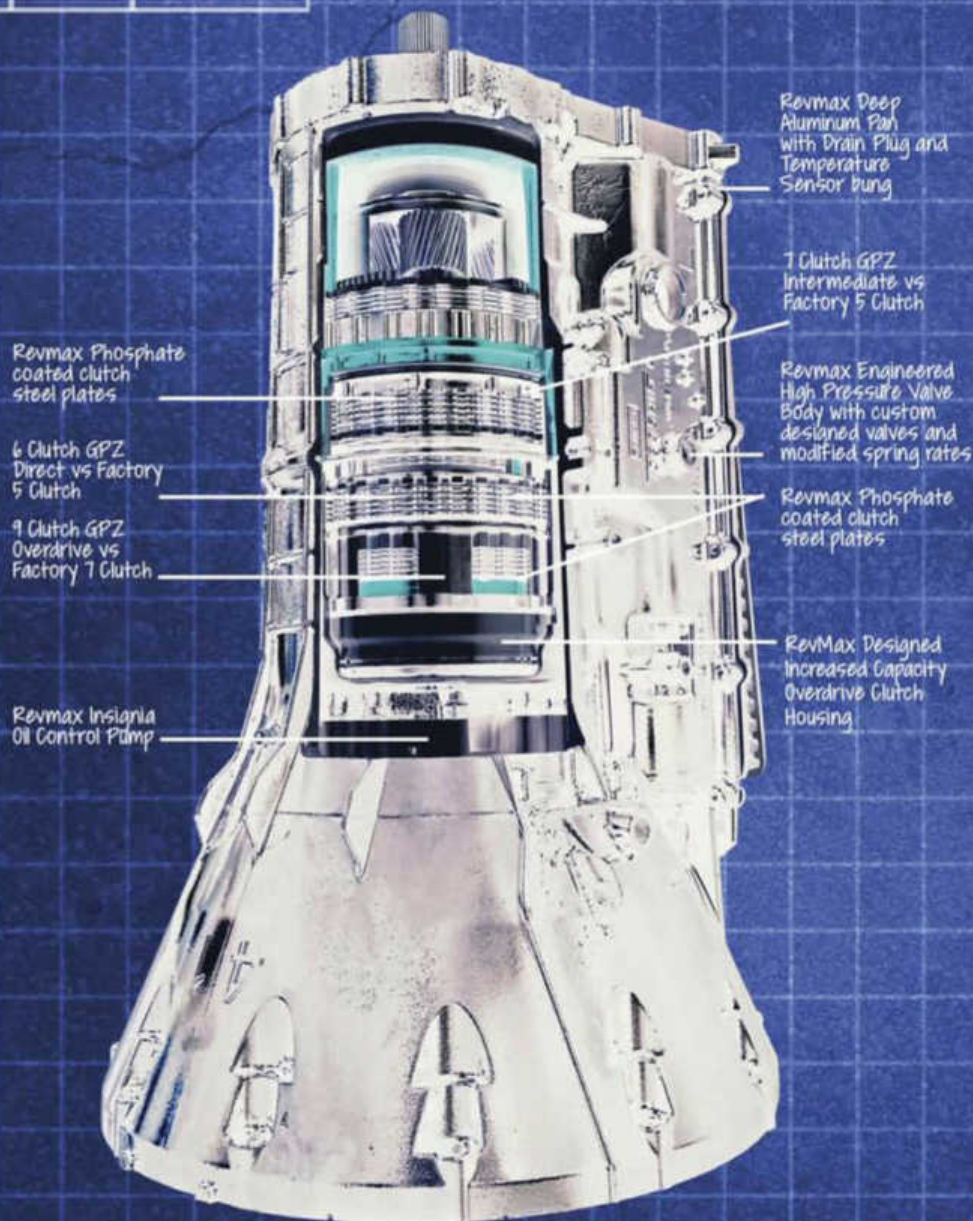
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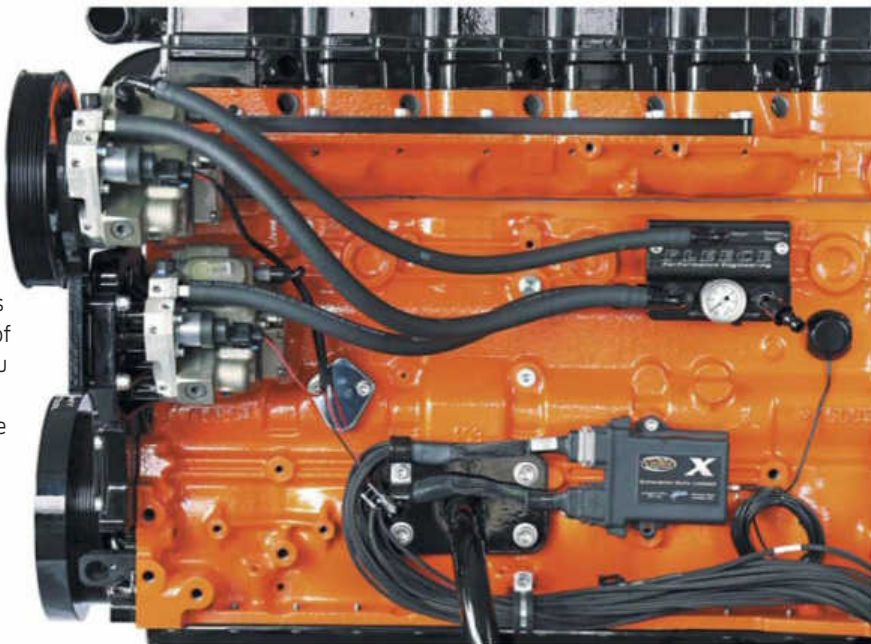
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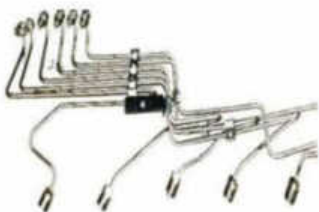
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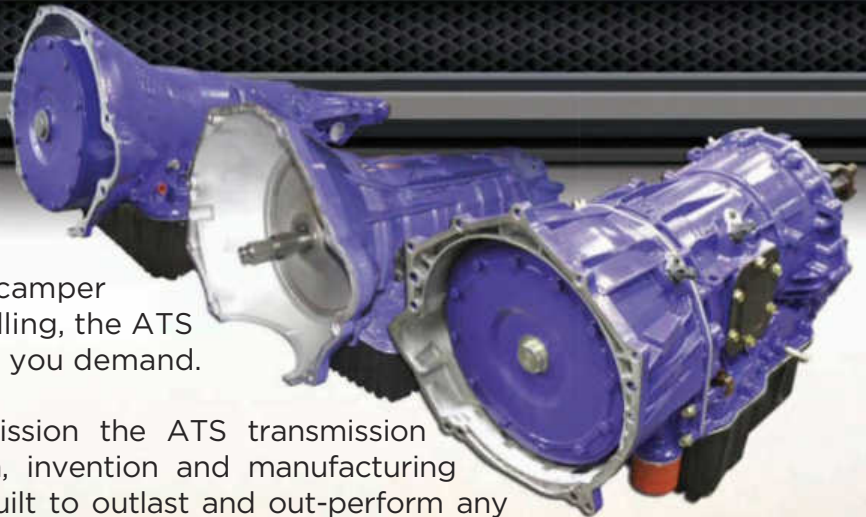


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# Vintage Armour

Retro Style Meets Modern Convenience







BY ADAM BLATTENBERG  
PHOTOGRAPHY BY ANNA TAYLOR

**T**he 1977, 6th generation, 4-door F-250s were not a widely offered production of Fords. Custom made for each owner, they were essentially built by hand, a good majority of them built for the military or the railroad industry. These Crew Cab Dentsides (as they are often called) are quite literally two cabs joined at the factory. There were only a few thousand made, and obviously so, this makes them quite rare. What makes this particular F-250 even more rare is what owner Kip Fulks has done to it. Kip Fulks is the co-founder and President of Innovation and Footwear of Under Armour. Just as he does with his company, Kip enjoys doing things a tad bit differently.



# Vintage Armour

For the '77, Kip wanted the retro look, but still wanted all the creature comforts of a newer truck.

Thus, Fulks entrusted the '77 to Justin Brunner, owner of Bent Metal Customs in Lansdale, Pennsylvania. Justin performed what is best described as a frame off restoration on Kip's Ford. The truck, "Was in absolute pieces when it showed up at the shop," says Brunner. While it was done over a few years, Brunner estimates it took roughly a year of solid work to get all the extensive body work, frame work, paint and so much more that turned Fulks' F-250 into the gem you see here.

## CUMMINS POWER

The 5.9L Cummins 12 valve under the hood has been kept mainly stock for reliability reasons but did reap the benefits of a few "go fast" upgrades. A set of Stage 3, 90-hp injectors from Dynamite Diesel Products were installed. Fuel supply to the DDP injectors comes in the form of a FASS Titanium Series, 125 gph pump that feeds a reworked 500cc P-Pump from Northeast Diesel Injection capable of revving the engine to 5,000 rpm. To provide the air to match the added fuel, Fulks chose to use a turbo from Stainless Diesel. It's a 63mm, T3 mount unit with a tight

0.80 AR for quick spool and great street manners. The Stainless Diesel turbo pushes compressed charge air through a 3-inch intake manifold from Trex Tech into the stock Cummins head that's been upgraded with stiffer valve springs from Hamilton Diesel to contain the boost. Spent air then exits the engine through a Silverline Exhaust kit. The Cummins also received an AFE intercooler from a 1996 Ram (which Brunner says was one of the more difficult things to modify to fit in the Ford) as well as an upgraded harmonic damper from Fluidamper. While it hasn't seen a dyno yet, power output is estimated to be around 650 rwhp. Helping the power get to the ground is done with a ZF5 transmission complete with custom shift knobs sporting the Under Armor logo.

## CAPABLE RIG

Since Fulks is an avid hunter and outdoorsman, the truck had to be capable off road. So both front and rear axles were upgraded, a newer Dana 60 was swapped





in upfront, and an AAM 11.5 axle from a 2003 Dodge was used out back with disc brakes at all four corners. The axle modifications did not stop there, as both were treated to new larger and stronger inner and outer axle shafts, ARB Air Lockers, and Warn locking hubs up front and a G2 rear diff cover to top it all off.

The addition of a lift kit from BDS Suspension complete with Fox Racing Shocks at all corners soaks up the bumps nicely and also allows clearance for the 37-inch tall Mickey Thompson Baja MTZ tires. Keeping the truck looking as close to what it looked like in 1977 was still very high on Fulks list, so using new wheels would not cut it, and the stock wheels weren't an option, as they would not fit with the new disc brakes. So, Fulks had a new, custom set of wheels cut by Wheel Smith Wheels made to look exactly like the smaller 1977 versions but large enough to clear the brakes.

Further mod's include Fox steering stabilizers and a Warn Zeon 12K winch built into the rear bumper. The bumper had to be extensively reinforced by Bent Metal Customs to carry the load the Warn winch would put on it.



Northeast Diesel Injection built the 500cc P-Pump that feeds a set of Dynomite Diesel 90-hp injectors pushing the 12-Valve Cummins to an estimated 650 horsepower.



Turbocharging duties are handled by Stainless Diesel's 63mm T-3 mounted turbo with a tight 0.80 exhaust housing AR.







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Other than the painted window sills and custom steering wheel, you'd never know you were driving a 1977 truck but rather a new King Ranch Super Duty.



All the gauges, switches and air vents including the rear vents on the 2012 dash work flawlessly.

## KING RANCH

Since most of Fulk's time would be spent inside the '77, the original interior wouldn't even come close to cutting it. So Bent Metal Customs sourced a complete interior from a 2012 King Ranch Super Duty to be transplanted. After modifying the interior, the body panels were Dynamated to reduce noise and help keep temperatures in check. Brunner then fit all the pieces. The seats, however, were not that easy and required extensive modification to fit them in. Once he'd made all the necessary modifications and everything was fitting the way it should, the stereo was installed (featuring multiple parts from JL Audio, Kenwood, and Memphis Audio). Before sending it off to Gillin Design for upholstery, Bent Metal Customs installed a slick, keyless push button ignition system from Touch and Go. At Gillin Design, a ton of work was done: the headliner was made from scratch, complete with a built-in, drop-down TV screen. High-end Mercedes English Wall carpet was laid down; door panels were built from scratch and installed; multiple select parts were wrapped in leather, and the rear seats were reupholstered. The truck then made it back to Bent Metal Customs where final touches were made before it could be returned to Kip Fulk.

Not too many resto-modded vintage trucks have this much attention lavished on them, but just about everything done to this truck makes it a dream truck. Congratulations Bent Metal Customs and Kip Fulk, you've built one of the nicest vintage Fords we've seen in years. **DW**



## Sources

### BENT METAL CUSTOMS

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### GILLIN CUSTOM DESIGN

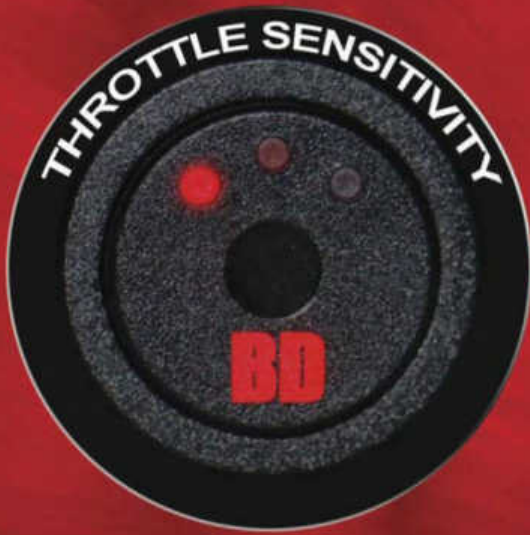
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# Slow Your Role

## Installing the SpeedBrake on a Duramax (With Gale Banks!)

TEXT AND PHOTOS BY JUSTIN FIVELLA

**J**ust a few short years ago, the thought of 600 hp and 1000 lb.-ft. of torque in a daily driven street diesel was unimaginable. But thanks to the marvels of technology, not only is this kind of insane power possible, it only takes a handful of mod's and a weekend with a capable group of friends.

Funny thing is, everyone talks about adding big power and having the capability of towing more than four times the weight of their trucks, but seldom do owners talk about slowing all that mass down. That's right, your big-power rig might be able to yank a 20,000 pound trailer up the steepest of grades, but what about on the backside? Are your brakes cooked, pedal mashed to the floor, causing you to white-knuckle your way to a runoff spot?

While that might be a bit of an overstatement (since most modern brake systems are capable of hauling down sizeable loads in most conditions) how much is really left in reserve? In a panic situation, do you have enough to safely slow down your truck and trailer? What if you could distribute some of the deceleration forces away from the brakes and into the engine and drivetrain? As it turns out, it's possible to do so with modern Duramax and Power Stroke-equipped trucks.



Welcome back to another installation story with our 2006 Chevrolet Silverado 2500 Duramax project truck. It's already received a Banks iQ system, and this month we add a Banks SpeedBrake to help control downhill speeds while loaded or towing.



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## MUCH MORE THAN EXHAUST BRAKES

As I'm sure you already know, exhaust brakes can be quite effective at scrubbing speed. In most cases, an exhaust brake is a pneumatically controlled valve placed in the exhaust system that can increase back-pressure and thus decelerate forces. But as effective as exhaust brakes are, traditionally they're either "on or off," which means there's very little modulation.

According to John Espino of Banks, as far back at the late '90s, Banks was experimenting with improving the braking performance of street-driven diesels, and although they made a great exhaust brake at the time, they were looking for the ultimate fix and quickly realized that a traditional exhaust brake just wasn't going to cut it:

"We came up with the idea of using the brake for more than 'on or off' braking by creating the methodology of using the brake as an active component that would regulate downhill speed and the braking intensity based on a set speed point the driver selects," he said.

OK, so they wanted to incorporate an all-encompassing braking system for street driven trucks, but how did they go from concept to reality?

"Our first prototype was for the Ford Power Stroke equipped with a 7.3 liter engine. The electronics we created were extensive, and rather complicated. Since this effort predated CAN we had to use a lot of wiretapping to get the signals we needed to make it function correctly. It worked awesome, moving the back exhaust pressure valve constantly to regulate speed and the amount of braking force...but at a cost of around 20 wire taps. That's 20 taps that can lose connection, or be installed incorrectly. It was a great idea that worked well but just wasn't commercial. We needed technology to catch up with what we were thinking," Espino said.



**1** The Banks SpeedBrake comes with everything needed to slow your Duramax in a hurry; even a CARB sticker, all the necessary wiring, thorough instructions and the PCM unit.



**2** Here's the brains behind the SpeedBrake, and it mounts safely under the hood. The SpeedBrake can be used as a freestanding unit or for even more control; it can be connected to the Banks iQ tuner.



**3** A quality unit is nothing without a proper infrastructure, so Banks goes to great lengths to create OEM-quality harnesses that can stand the abuse and are cut to exact dimensions.



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## DIFFERENT BY DESIGN

Although it took the OEMs a decade to catch up, when stock diesels started arriving with variable vein turbos from the factory, it meant that Banks' goal of providing a comprehensive braking system could finally come to fruition:

"The SpeedBrake is purely electronic and plugs directly into factory connections, and through the Banks iQ's touch screen, the user can set the target speed that they feel comfortable with



**4** The SpeedBrake plugs directly into the OBDII port of the Duramax so that it can communicate with the CAN-BUS system.

when heading down a grade, and the SpeedBrake will work to keep the truck and its load in that zone. Think of it as downhill cruise control," Espino said. "The SpeedBrake works by reading signals from the CANBUS, varying the vane position (on the turbo since the Duramax uses variable vanes) to provide optimal engine backpressure, controls the transmission to shift to the best gear for any braking situation (without building excessive



**5** We turned to Stanton Performance for the install, and owner Jeremy Stanton had the SpeedBrake installed in a couple of hours. After disconnecting the negatives from the battery terminals, he began the install by removing this support bracket to gain access to the fuse panel.



**6** To gain access to the fuse panel, the cover must follow the removal of the panel bolts, so the fuse panel can be lifted up and out of the way.



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RPMs) and locks the torque converter all to optimize the braking performance that you set," he added.

You get the point; it uses many different parameters like the turbo, the transmission and the torque converter to help slow downhill speed. But what does this mean from the driver's seat? Well, it means that not only can the driver set a downhill speed that the truck will then adhere to without having to monitor the brakes, but in the event the driver wants even more braking performance beyond stepping on the brake pedal harder, the SpeedBrake settings can be cranked up to more aggressive parameters so that the engine, turbo and drivetrain help to further scrub speed.

## EASY INSTALL

As we've come to expect from Banks, the installation of the SpeedBrake was nice and simple. In our case, we'd previously installed a Six-Gun tuner, which meant the SpeedBrake was a plug-and-play affair, but for those who don't have a Six-Gun, the SpeedBrake can also be installed as a freestanding unit.

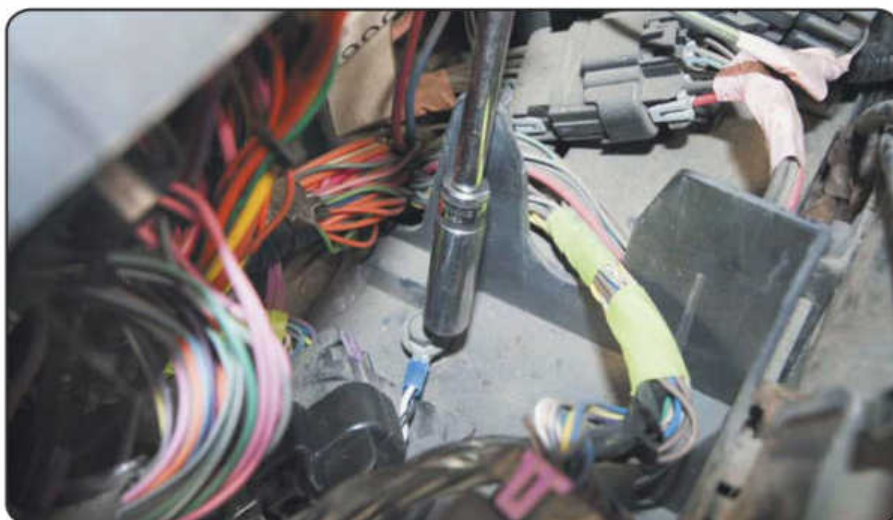
Although we must admit, that in order to take full advantage of the SpeedBrake's options and the many handy features the Six-Gun has to offer (user-set speed, coolant and transmission temp alerts, live fuel economy and full control over the SpeedBrake) it's in your best interest to pair it with the Six-Gun. As for the actual installation, we paid a visit to Stanton Performance in Martinez, California, for a tidy and thorough install. Owner Jeremy Stanton had our 2006 Chevrolet Silverado 2500 in-and-out in a few hours thanks to his expertise coupled with the detailed instructions and the plug-and-play nature of the product.

## TRAIL TALES

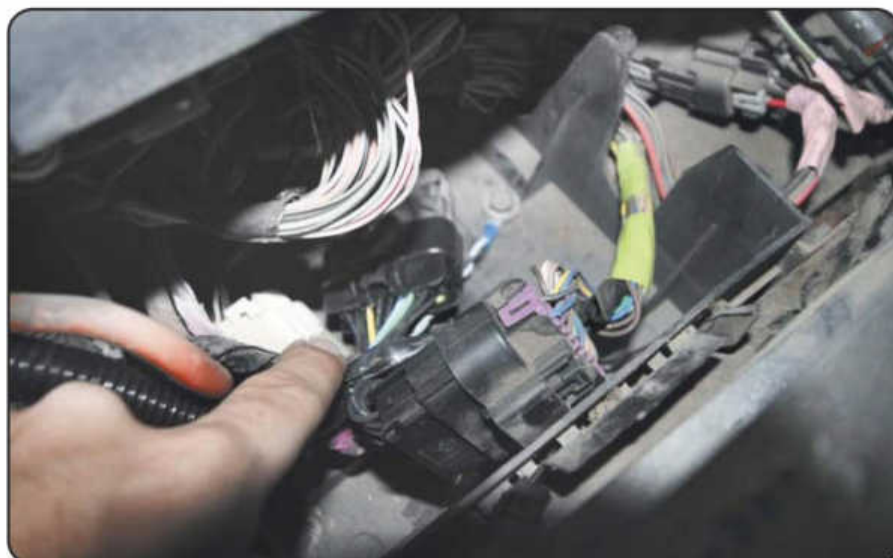
Having used the SpeedBrake for several weeks now, we had no idea



**7** Underneath the fuse panel, you'll find this OEM connector. The Banks harness will need to be plugged inline.



**8** Next, you'll want to install the Banks grounding ring connector to this ground bolt below the fuse box.



**9** Now you'll need to plug the Banks connectors inline between these two OEM connectors underneath the fuse box.



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how we towed without the SpeedBrake the first time we were hooked up to a heavy load. Seriously, if not for the incredible downhill speed settings that allow one to set it and forget it, the fact we can dial in the aggressiveness of the settings for descent levels or payload makes this product invaluable. We were already fans of the iQ tuner since it gave us control over the CAN-BUS system on the truck, but now that we can also control our down-

hill speed with the poke of a button, we're beyond impressed.

The installation was simple; the product works flawlessly, and now we can hold safe road speeds on hills without cooking the brakes or excessive RPMs. If some individual had told us the SpeedBrake worked this well, prior to our testing, we would have called him a dreamer. But now that we've tried it first hand, you can call us believers. **DW**



**10** Banks makes it easy to tap the appropriate wires in the fuse box with the supplied wiretaps and clearly marked instructions. After the appropriate wires are tapped, simply slide the fuse-box cover back on.



**11** Don't forget to plug the main SpeedBrake harness cables into the appropriate OEM plugs. The quality of the Banks connectors is unparalleled.



**12** Now it's time to go fishing—for wires that is! Actually, it's time to feed the Banks connector into the cab so that it can be plugged into the dash-mounted iQ unit.



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**13** We taped the wires to some rigid mechanics wire and fed it through a rubber grommet on the firewall.



**14** Now the optional Tuner-to-SpeedBrake cable can be plugged into the supplied OBDII interface cable.



**15** Next, move underneath the truck and find the main transmission harness connector on the backside of the transmission: Unplug it.



**16** After routing the Banks Transmission Intercepting Cable down to the back of the transmission, plug the connector inline and safely mount the harness out of harm's way.



**17** Next we move under the hood to mount the SpeedBrake with the supplied Velcro adhesive strips to the fuse box. Note that we'd already mounted the Banks iQ on the top of the box, so we secured the SpeedBrake to the side.



**18** Using the Banks iQ tuner, we can now control the SpeedBrake and the engine tuning settings on our Duramax with a few pokes of a button. How's that for integration?

## SOURCES

**GALE BANKS ENGINEERING**  
800.601.8072  
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**STANTON PERFORMANCE**  
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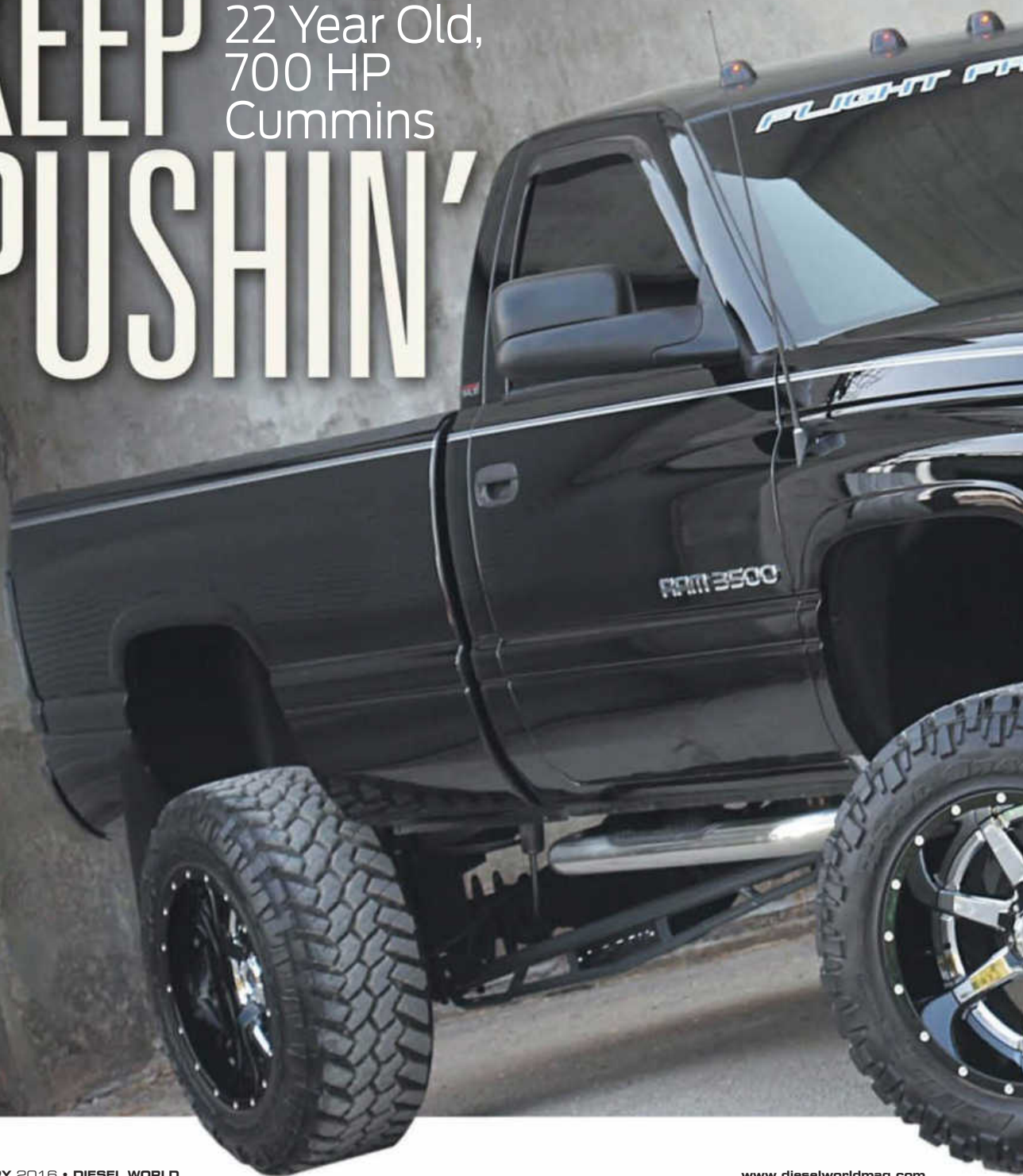
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# KEEP PUSHIN'

22 Year Old,  
700 HP  
Cummins





TEXT AND PHOTOS BY MIKE MCGLOTHLIN

**T**wenty-two years old. 177,000 miles. Original paint. One glance, you'd never believe it: Miles Flight's '94 Dodge Ram has spent more than two decades exposed to Northern Ohio winters. One reason for this second-gen Cummins' near-perfect condition has to do with the fact that it's been garage-kept most of its tenure. But don't be mistaken; it's seen its fair share of harsh weather. In fact, the truck plowed snow for the first three years of its life, and regularly saw snow until '08.



## FAMILY HEIRLOOM

But the primary reason for the truck's showroom stature rests in its sentimental value. You see, the truck originally belonged to Miles' father, whose untimely passing in 1998 left the truck in the care of his mother. A few years later, it was sold to Miles' uncle, who retained ownership until 2008: "I was a senior in high school when I bought it back," Miles told us. "Essentially, the truck never did leave the family."

As you might've imagined, a lot of time, effort, and pride has gone into not only preserving the truck's factory paint and bodylines, but also in modifying it. Adding to that is the fact that Miles is a talented fabricator, and you start to understand why the truck is built the way it is. Its traction bars, 5-inch lift, front long-arm kit, track bar, sway bar and



Under the hood of Miles Flight's pristine '94 Dodge Ram sits a 177,000-mile 5.9L Cummins with a stock bottom end. The factory 12-valve head was ported, polished, and fitted with O-rings at Enterprise Engine Performance, also sports 60-lb PacBrake valvesprings and is anchored to the block via ARP 2000 head studs. Miles, the owner of Flight Fabrications, built the valve cover plate.



A pair of Industrial Injection turbos cram 70 psi of boost into the engine. Up top sits a wastegated S364 with a polished compressor housing, while a T6 flanged S475 beneath it serves as the atmosphere unit. Miles fabricated all of the intercooler plumbing and exhaust piping to make the chargers work. The S364 mounts to a three-piece exhaust manifold from PDI.



The 12mm Bosch P7100 truck has been fitted with .022 delivery valves, a billet rack plug, 4,000-rpm governor springs, and a #5 fuel plate. The old P-pump feeds a set of Dynomite Diesel Performance Stage 4 injectors (5x14's) and Miles leaves the timing set around 16.5 degrees.

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'94-02 #800120



'03-08 #800123

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# KEEP PUSHIN'



From top to bottom, almost nothing has gone untouched on this second-gen. Just days before our photo shoot, Miles built the mesh steel grille insert you see here and had it powder coated to match the rest of the truck.



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## Specs:

**YEAR/MAKE/MODEL:** 1994 Dodge Ram 2500

**OWNER:** Miles Flight

**ENGINE:** 5.9L 12-valve Cummins

Enterprise Engine Performance ported, polished, O-ringed factory head

PacBrake 60-lb valvesprings

ARP 2000 head studs

**FUEL:** Dynamite Diesel Performance Stage 4 injectors  
.022 delivery valves

4,000-rpm governor springs

#5 fuel plate

Industrial Injection billet rack plug

AirDog 100-gph fuel system

**AIR:** Industrial Injection S364/S475 compound turbos

Flight Fabrications compound piping

Fabricated aluminum airbox

Ported factory intake elbow

AFE air filter with outerwear

**EXHAUST:** High temp coated custom 5-inch turbo-back system with polished 6-inch Flo-Pro tip

Three-piece PDI exhaust manifold

Transmission: Tantrum Drivetrain NV4500

1-3/8-inch input shaft

Chromoly main shaft

Cryogenically treated third gear

Later model top plate with short throw shifter

South Bend 3600 dual disc clutch

**INJECTABLES:** Snow Performance Stage 2

water/methanol system with custom fabricated polished stainless reservoir behind front bumper

**HORSEPOWER:** 708 hp (dyno)

**TORQUE:** 1,572 lb-ft (dyno)

**TIRES:** 35x12.50R20 Nitto Trail Grapplers

**WHEELS:** 20x12 black with chrome face Fuel Mavericks

## SUSPENSION/STEERING:

Flight Fabrications 5-inch lift kit

Front long arm kit with adjustable limiting straps

Traction bars with built-in LED's

Front track bar

Tubular dual steering stabilizer mount

Steering box stabilizer bracket

'09 model year tie rod swap

Custom front sway bar and links

Fox 2.0 Performance Series reservoir shocks

links, dual steering stabilizer mount, and steering box stabilizer bracket can't be ordered in a catalog—Miles built all of these components himself.

## POWERHOUSE

Aside from the custom fabricated mod's that made the truck more drivable and visually appealing, Miles didn't skimp on anything in the power department either. While the factory bottom end was left alone, the head became the beneficiary of 60-lb. valve springs and was ported, polished, and

fitted with O-rings at Enterprise Engine Performance. ARP head studs hold down the fort, anchoring the worked over 12-valve head to the block.

At the heart of the 5.9L Cummins rests the original 12mm P-pump. It's graced with .022 delivery valves, 4,000-rpm governor springs, a billet rack plug, #5 fuel plate, and 16.5 degrees of timing advancement. The 175-hp (factory rated) P-pump is supplied with 35 psi of fuel pressure thanks to a 100-gph AirDog fuel system and sends fuel to a set of DDP Stage 4 injectors.



Ensuring adequate fuel supply makes it to the P7100 is a 100-gph AirDog system. Miles told us the original AirDog lift pump is set to send 35 psi the P-pump's way.



The long arm kit shown here was built using 1026 DOM steel, Currie Enterprises (greasable) Johnny Joints, and greatly improved the drivability of the truck.



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## HOMEMADE COMPOUNDS

For airflow, Miles put his fabrication skills to use once more. After receiving an internally wastegated S364 and an S475 from Industrial Injection, he built his own compound turbo system. The intercooler tubes, hot-pipe, and turbo support brackets were all handcrafted in his shop, along with an aluminum airbox. The factory intake elbow was also ported for improved airflow.

## POWER TRANSMISSION

Although NV4500 manual transmissions are robust in nature, Miles didn't take any chances when it came to power transfer. In addition to adding a dual disc 3600 clutch from South Bend, he had the crew from nearby Tantrum Drivetrain beef up the five-speed's weak links. The input shaft was upgraded to a 1-3/8-inch diameter unit, a chromoly main shaft was added, and third gear was cryogenically treated for utmost strength.

With stunningly clean looks, show-piece-worthy suspension components, and all the under hood bells and whistles to go along with it, this truck is truly an heirloom worth preserving. Even better:



Thanks to Tantrum Drivetrain in nearby Doylestown, Ohio, Miles' NV4500 is as close to indestructible as it gets. The five-speed was fitted with a larger 1-3/8-inch input shaft, chromoly main shaft, a cryogenically treated third gear, and a later model top plate, so a shorter shift throw could be utilized. A "half-comp" dual disc clutch from South Bend handles power transfer. It features a 3,600-pound pressure plate load rating, is low on noise, very drivable, and is good for up to 850 hp.

Nothing has been overdone. The cosmetic changes don't disrupt the truck's overall visual appeal; the suspension and steering upgrades were done—more or less—to improve drivability, and a time-tested combi-

nation of power adders are utilized to make good, "streetable" horsepower: "Less is more when the right parts work in conjunction with each other," Miles told us. We couldn't agree more. **DW**



Mile's unique traction bar design is what initially broke him into the diesel industry. Not only do his ladder bar style units function flawlessly, but thanks to integrating wire within the 1026 DOM steel tubing, placing LEDs behind his company name, and mounting a switch in the cab, the words "Flight Fab" can be put on full display once the sun goes down.



If you were wondering, nothing is stock up front anymore. The front track bar, dual steering stabilizer (with Fox 2.0 IFP shocks) custom front sway bar and links, and steering box stabilizer bracket were all fabricated by Miles. An '09 model year tie rod swap even made it onto the truck.



As Mile's truck came with a five-speed, the optional (and venerable) Dana 80 graces his Ram. A Spectre Performance aluminum diff cover offers it a little dress up. Also, notice the 5-inch exhaust system, which Miles had coated in high temp black (for a different look) and topped things off with a polished 6-inch Flo-Pro tip.



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# Fire Breathers

## 7 Daily Driven, Dyno-Proven Setups

TEXT AND PHOTOS BY  
MIKE MCGLOTHLIN

**F**ipping through the pages of *Diesel World* can definitely get you itching to hop up your ride. Checking out all the dyno contests and power shops we hit up has to inspire you at some point; however, you might also get discouraged when you hear about guys throwing down 800, 900 and 1,000 hp at all these events. Showcasing fire breather after fire breather can be pretty intimidating (we understand) but you don't have to break records to own a killer set up for yourself.

That's why we compiled this article. With practicality and bang-for-the-buck in mind, we're spelling out seven dyno-proven power combos from real-world, street-driven trucks that can point you in the right direction to get your truck putting down some heftier numbers. Sure, there were higher horsepower trucks in attendance at this particular event—the annual

Randall's Performance Dyno Day & Open House held in Gladstone, Illinois—but the rigs featured here are driven daily, hooked to trailers, only used during winter, and they still make respectable power. The best part is—the following parts combinations can be duplicated without breaking the bank.

Want more horses? Well, here you go. **DW**





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## 701-HP GMC

**OWNER:** Kaden Nelson

**HOMETOWN:** Joy, Illinois

**TRUCK:** '09 GMC Sierra 2500

**ENGINE:** 6.6L LMM Duramax with Empire Diesel Performance Stage 1 Street Tow cam, Comp Cams 110-pound valve springs, ARP 2000 head studs

**FUEL:** Exergy Performance 45-percent over injectors, Exergy Performance 10mm stroker CP3, AirDog II 165-gph fuel system

**AIR:** Wehrli Custom Fabrication compound turbos with billet S475 atmosphere charger and Danville Performance 2.5-inch VGT secondary

**TRANSMISSION:** Merchant Automotive MA700 with billet input and output shafts

**TUNING:** EFILive by Adrenaline Truck Performance with DSP5 switch

**HORSEPOWER:** 701 hp

**TORQUE:** 1,157 lb-ft.

**SUSPENSION:** Custom-fabricated traction bars, Merchant Automotive stainless tie rod sleeves, PPE pitman and idler arm support kit.

**QUICK FACT:** Kaden uses his GMC to commute to his day job, work around the farm, hit the drag strip and hook to the sled during the summer months. The stock bottom end LMM has survived all the punishment it's seen so far.



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## 698 HP Dodge

**OWNER:** Tim Svob

**HOMETOWN:** Canton, Illinois

**TRUCK:** '06 Dodge Ram 2500

**ENGINE:** Factory 5.9L Cummins common-rail with ARP Custom Age 625 head studs

**FUEL:** Exergy Performance 60 percent over injectors, Exergy Performance 10mm stroker CP3, AirDog II 165-gph fuel system

**AIR/EXHAUST:** Source Automotive compound turbos with cast S475 atmosphere charger and cast S362 secondary, CFM Plus intake elbow, AFE air filter, High Tech Turbo second-gen exhaust manifold, Banks-based 4-inch turbo-back exhaust system

**TRANSMISSION:** Goerend Transmission 48RE with billet-steel input, intermediate, and output shafts, constant pressure valve body, and triple disc torque converter

**TUNING:** EFILive by Silver Bullet Tuning with CSP5 switch

**HORSEPOWER:** 698 hp

**TORQUE:** 1,234 lb-ft.

**SUSPENSION:** CalTracs traction bars

**QUICK FACT:** Tim bought his truck brand new in '06, and because of the venerable 5.9L Cummins under the hood, his low-mile, ultra-clean, crew cab Ram also traps more than 91 mph at the local eighth-mile drag strip (700+ hp at the wheels).

## 685 HP Ford

**OWNER:** Josh Todd

**HOMETOWN:** Milledgeville, Illinois

**TRUCK:** '04 Ford F-250

**ENGINE:** 6.0L Power Stroke with ported heads, hardened valve seats, and ARP 2000 head studs

**FUEL:** 215/75 conventional-style injectors, 165-gph AirDog II fuel system, Driven Diesel regulated return

**OIL:** Factory high-pressure oil pump

**AIR:** Billet S467 turbo from High Tech Turbo, Irate Diesel Performance T4 mount, ported intake manifold, Banks techni-cooler intercooler, Banks intake elbow, Holderdown Performance hot-side intercooler pipe

**INJECTABLE:** Banks water-methanol injection system

**TRANSMISSION:** 5R110 TorqShift built by Bud Tegeler with Precision triple disc billet torque converter, TransGo shift kit, Sun Coast clutches, billet input shaft

**TUNING:** Innovative Diesel via SCT programmer

**HORSEPOWER:** 685 hp

**TORQUE:** N/A (lost tach signal.), 1,150 lb-ft (est.)

**QUICK FACT:** Unfortunately, the downshift happy 5R110 TorqShift wouldn't allow Josh's truck to be dyno'd in fourth gear, so these numbers were made in third. The fact that the truck only made 40 psi of boost (45 psi on the street) leads us to believe that this nasty 6.0L could easily be getting 700 hp or more to the pavement. This is a major sleeper, especially with the snowplow mount up front. The best part is that the power adders used to get the truck to this level can be had on a reasonable budget. A work ready, stock appearing, high 11-second 6.0L? Yes, please.





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## 567 HP Dodge

**OWNER:** Randy Queckborner

**HOMETOWN:** Milledgeville, Illinois

**TRUCK:** '01 Dodge Ram 2500

**ENGINE:** 5.9L Cummins with Hamilton 188/208 cam, MaxSpool chromoly HD push rods and dual valve springs, fire-ringed head, ARP 2000 head studs

**FUEL:** Dynamite Diesel Performance 150-hp injectors, FASS 150-gph fuel system, Industrial Injection Hot Rod VP44, .093 injection lines

**AIR/EXHAUST:** Industrial Injection PhatShaft 64mm S300 with 14cm turbine housing, Steed Speed exhaust manifold

**TRANSMISSION:**

47RE built by Performance Transmission of Clinton, Illinois, with triple disc torque converter

**TUNING:** Edge Juice w/Attitude with Hot Unlock

**HORSEPOWER:** 567 hp

**TORQUE:** 1,106 lb-ft

**SUSPENSION:** LazarSmith traction bars

**QUICK FACT:** Randy's Dodge does a little bit of everything. It hooks to the sled, runs low '13s in the quarter-mile, tows regularly, and gets used like a truck. Careful part selection has yielded solid horsepower and torque numbers. This is a great power recipe for the VP44 crowd.



## 547 HP Dodge

**OWNER:** Justen Shelman

**HOMETOWN:** Hillsboro, Iowa

**TRUCK:** '02 Dodge Ram 2500

**ENGINE:** 5.9L Cummins 24-valve with ARP 2000 head studs

**FUEL:** Dynamite Diesel Performance 150-hp injectors, Industrial Injection Hot Rod VP44, FASS 150-gph fuel system

**AIR/EXHAUST:** BD Super B Special turbo (64.5mm), Spearco intercooler, Flex-a-lite electric fans, stock air box and intake elbow, BD exhaust manifold, Silverline 4-inch turbo-back exhaust system

**TRANSMISSION:** Goerend Transmission 47RE with triple disc torque converter, billet-steel input, intermediate, and output shafts, BD billet Flex-Plate

**TUNING:** Edge Juice w/Attitude with Hot Unlock

**HORSEPOWER:** 547 hp

**TORQUE:** 1,110 lb-ft

**SUSPENSION:** One Up Offroad traction bars

**QUICK FACT:** This truck is a real head turner, and we guarantee it's one of the cleanest second gens you'll find. Justen told us that his low-mile (94,000) Dodge is garage kept and only sees salt when he needs four wheel drive in the winter. Justen has used the same dyno since he started modifying the truck, and claimed that after making 535hp at his last visit, the addition of Flex-a-lite fans and a Spearco intercooler gained him 12 more hp and a whopping 80 lb-ft.





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## 467 HP Dodge

**OWNER:** Brock Connor

**HOMETOWN:** Muscatine, Iowa

**TRUCK:** '99 Dodge Ram 2500

**ENGINE:** 5.9L Cummins with ARP 2000 head studs

**FUEL:** Farm Boys Diesel 150-hp injectors, standard output VP44, AirDog 100-gph fuel system

**Air/Exhaust:** Industrial Injection Viper Phat-Shaft 63mm S300, Pusher intake manifold

**TRANSMISSION:** Sun Coast 47RE with triple disc torque converter

**TUNING:** Edge Comp box

**HORSEPOWER:** 467 hp

**TORQUE:** 871 lb-ft.

**QUICK FACT:** After owning this second gen for two years, Brock fixed the Dodge's body and had it repainted Mercedes-Benz Bahama Blue Metallic. Then, last summer, he had to perform a few "forced" upgrades, as the head gasket needed replaced (and ARP studs added) and the factory Holset failed (enter 63mm PhatShaft turbo). While Brock likes the respectable power numbers his VP44 Ram laid down; he told us a P-pump conversion might be in the truck's future.

## 452 HP Chevy

**OWNER:** Zach Meyers

**HOMETOWN:** Pekin, Illinois

**TRUCK:** '08 Chevy Silverado 2500HD

**ENGINE:** 6.6L LMM Duramax

**FUEL:** FASS Titanium 150-gph fuel system, stock injectors and CP3

**Air:** Stock turbo, Wehrli Custom Fabrication 3-inch Y-bridge and 3-inch passenger side inter-cooler pipe, MBRP 3-inch driver side intercooler pipe, S&B Filters cold air intake

**TRANSMISSION:** Allison 1000 with TransGo shift kit

**TUNING:** EFILive by Duramax Tuner with DSP5 switch and built transmission tuning

**HORSEPOWER:** 452 hp

**TORQUE:** 741 lb-ft

**SUSPENSION:** Rare Parts Gen2 tie rods, Kryptonite upper control arms, Cognito Motorsports pitman and idler arm braces

**QUICK FACT:** Zach is living on the edge of what the factory Allison can handle, but he knows that, hence the built transmission tuning from DuramaxTuner. While some slippage could be seen on his dyno graphs, these are still pretty impressive numbers for an A1000 still sporting the factory torque converter and clutches.





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# PROJECT BAD INFLUENCE

How a Father-Son Combo Built a SEMA Rig

TEXT BY STEVE TEMPLE  
PHOTOS BY STEVE TEMPLE  
AND CARTER REED, BDS SUSPENSION

Usually, the apple doesn't fall far from the tree. In Pete Costanzo's case, though, his son Bryson was the one who cultivated his passion for diesels. Prior to that, the elder Costanzo had built up a string of go-fast cars over the last 15 years, but younger Costanzo enlightened him about the virtues of oil-burners: "Dad, diesel trucks are in today," he told him. "You need to get with the program!"





## ON BOARD

And getting with the program is what he did. Starting with a Ford called Project Charcoal Stroke, Pete moved on to a 2012 Dodge Ram dubbed Project Bad Influence. Was it really all that negative of an influence? Well, not exactly, but Pete does admit that, "It demanded a mind-boggling amount of time." Fortunately, this wasn't his first trip to the customizing rodeo, and he got a lot of help from his friends in the aftermarket.

But why the switch in grille emblems from Blue Oval to Ram's head? "My son, who's a firefighter in San Antonio, drives a diesel Ram." So, Pete (who has many years of experience in the automotive field, especially in vinyl body wraps and window film) leaned on his dealer connections to locate a slightly used 2012. With only 3,000 miles on the odometer, it wasn't even broken in—for a diesel, "But I got a smokin' deal on it," he admits.

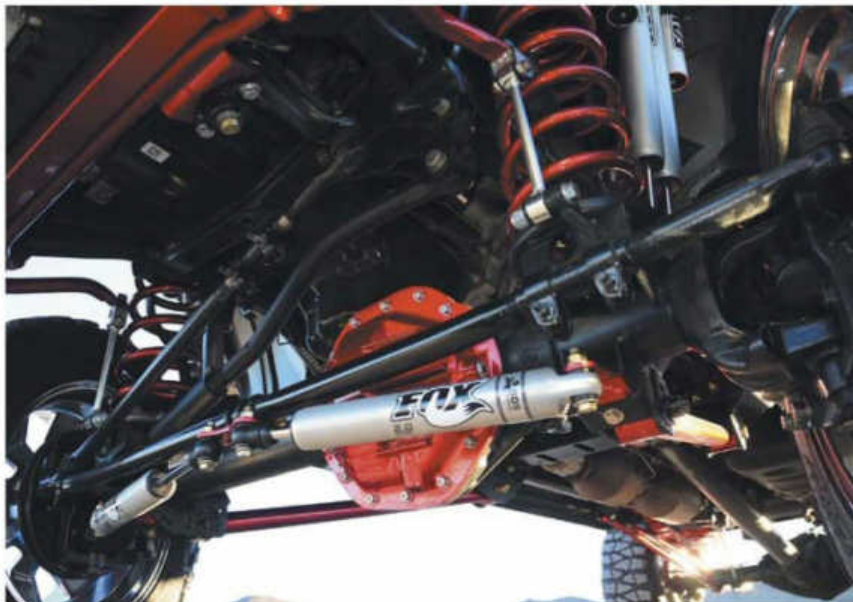
## SEMA CRUNCH

With one small problem, though: he hated the factory body color, a dull two-

tone gray. "It was hard to look past that—it was an old man looking truck," he winced. And even though he's technically "the old man" in this story, he didn't want his truck to have that image. So he knew he'd either get a colored vinyl wrap or a custom paint

job. He chose the latter, because of the intricate color scheme he had in mind. That proved to be a challenge in a couple ways, as you'll see.

First, though, he had to get busy on the engine and suspension, since he had less



Street To Sand Off-Road Performance installed an eight-inch, 4-Link Long Arm System (stretched to ten inches) along with BDS adjustable track bar and traction bars.



A pair of color matched Fusion Bumpers packed with Baja Designs LED lights protect the front and rear ends.



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than a six-month timeline to complete the rig before the 2014 SEMA show. To speed things along, he enlisted the help of the crew at Street 2 Sand Performance in Reno, Nevada. This firm has an in-house chassis dyno for performance testing, along with a wealth of experience in after-market mods.



## PERFORMANCE

Pete prepared his rig to be more than just a show rig; he needed some “go” as well for towing a 30-foot Nordic boat to the lakes around Phoenix, Arizona. Enhancing the respiration of the 6.7L Cummins is a S&B cold-air intake and a Diamond Eye five-inch turbo-back exhaust that dumps over the rear axle. The H&S Mini Maxx Race Tuner upped the total output by as much as 300 ft.-lbs. of torque, he claims, so when he’s towing his

boat to the lake, his Ram doesn’t even know what’s back there.

## SUSPENSION

For lifting the chassis, Pete turned to BDS Suspension once again, as he had done before on the Ford Project Charcoal Stroke. He installed the eight-inch, 4-Link Long Arm System (stretched to ten inches) along with BDS adjustable track bar and traction bars, and dual Fox 2.0 remote-reservoir shocks.



The 6.7L Cummins under the hood was treated to an S&B cold-air intake and a Diamond Eye five-inch turbo-back exhaust, as well as an H&S Mini Maxx Race Tuner.





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To ensure a level ride when towing and hauling, Pete also went with a set of Firestone air bags fitted on custom mounts. The air compressor is also plumbed to supply the set of Horn Blaster air horns to trumpet his arrival (just in case the paint scheme isn't loud enough as is). Elite Customs handled the custom white, candy red, and black paint job that gives a whole new life to that "old man look" that it had before. Even so, Pete says that trusting the painter without being there in person was an act of faith. "The concept on paper isn't easily carried out without you actually being there," he says. "There are unknown



aspects of fabrication, and I was a 12-hour drive away from the shop and had to deal long distance with many of the details."

Fortunately, it all turned out fine, and the suspension and drivetrain were finished to match the body color. This shining showboat rolls on 37 X 13.50 X 22 Nitto

Mud Grapplers on 22 X 12 Hostile Hammered wheels fitted with a set of EBC black, drilled rotors.

### THE DEVIL IS IN THE DETAILS

In addition to the intricate paint scheme, the exterior received a ton of





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body mods, including: a custom Ram air hood, Fusion bumpers, an AWC grille, Monster Hooks, EGR fender flares, and Bestop Powerboard steps. Finishing off the cargo area was a BedRug bedliner and Retrax Powertrax Pro bed cover.

Taking things even further is a meticulously designed system of lights. "Each and every one of them is carefully placed and calculated," Pete points out. "We wanted functionality—not just a lot of bling—so they light up a country mile on a pitch-black night." The illumination includes a plethora of LEDs from Baja Designs, plus Elite Customs/Diode Dynamic HID headlights and LED tails.

As for the cabin, the inside of Bad Influence is lavished with plush Alea Leather and ultra-suede inserts. Panels are refinished in red as well. A custom panel of switchgear operates all the lights and other accessories.

Completed in the nick of time, Bad Influence has captivated all sorts of onlookers and served as a promo vehicle (in every sense of the term) for dealerships. Pete feels that this badass treatment has a lot of value for dealers since diesel truck



Controls for all the custom LED lighting are mounted below the factory head unit and color matched dash.

enthusiasts are willing to pay for the right lift and look. A stodgy old man truck just doesn't cut it: Diesel owners demand a rig with some style and pizzazz.

At the end of the day, though, what matters more to Pete than the sizzle is

the solid substance of the time spent with his son Bryson. "This turned out to be a bonding experience with my son," Pete adds with a note of pride. After all, the family that diesels together, stays together. **DW**







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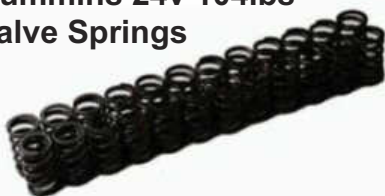
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# The BIG SHOW

## 2015 Scheid Diesel Extravaganza

TEXT BY CHRIS TOBIN  
PHOTOS BY CHRIS TOBIN, KYLE TOBIN  
AND HEATHER POWELL

**T**he aptly named Scheid Diesel Extravaganza is hands down the biggest occasion in the diesel world: The 2015 bash marked the nineteenth year of the event, and it was one of the biggest and best yet, drawing over 13,000 diesel fanatics in attendance over three days at the Wabash Valley Fairgrounds and Crossroads Dragway. The 2015 Extravaganza took over Terre Haute, Indiana, on Friday, August 28 at the fairgrounds and concluded Sunday, August 30 at the drag strip located adjacent to the fairgrounds. You would be hard pressed to squeeze more action into one place.







Shane Kellogg piloted Trump to the Scheid Diesel Extravaganza win Friday night and finished in second place on Saturday night in Super Stock.

## SHOWIN' & SHININ'

As in years past, the show got underway Friday at the fairgrounds with a huge turnout of vendors exhibiting their latest and greatest diesel performance products in both indoor and outdoor exhibition areas. Of course, the team from Scheid Diesel was well represented with a parts booth full of products and special "show pricing" at one end of the indoor vendor area and a T-shirt sales booth at the other, both of which had a constant flow of diesel junkies stopping by. In addition to the vendor booths, spectators could also get up close and personal with more than 70 Show-N-Shine vehicles entered in the competition on Friday and over 110 vehicles on Saturday, overflowing the covered show area on both days.



Vendor booths flank the sides of the indoor manufacturer's midway, allowing spectators to check out the latest and greatest diesel performance products.



Donaren Agostied ran his 2015 Chevy on the DP-Tuner dyno Friday afternoon, making nearly 600 horsepower and more than 1,000 lb.-ft. of torque.



Larry Kilburn took home the Best Custom Award with his Cummins-powered custom rat rod in Friday's Show-N-Shine competition.



The final round of Pro Dragster Sunday was a familiar sight with John Robinson (near lane) lining up against Jared Jones. Jones and the Scheid dragster pulled off the win with a mid 4-second pass at nearly 160 mph.



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Plaques were awarded to winners selected by the Purdue Diesel Club on both days in four categories, including: the Best Custom, Best Dodge, Best Ford and Best GM among the 185 total participants. Friday's winners included Larry Kilburn for his custom Cummins-powered Rat Rod, Doug Hardin for his silver Dodge, Dustin Donadio for his black Ford and Chase Davis for his red Chevy. Four more winners took home hardware on Saturday, including: David Hackett for his custom GMC, Leon Davis for his gray Dodge, Zach Soles for his maroon Ford and Todd Megyese for his blue GMC. While these eight were the only

ones to walk away with awards, there were many great looking rigs on display, and you'll get a chance to see quite a few of them here in the pages of *Diesel World* and our sister magazine *Ultimate Diesel Builder's Guide* in the future.

## POWER PLAY

Over the years, the dyno competition at the Scheid Diesel Extravaganza has been great, with many high horsepower runs taking place before a massive throng of screaming fanatics. And the 2015 Extravaganza did not disappoint, with both the DP-Tuner mobile chassis dyno and the

Dan's Diesel Performance mobile chassis dyno ready to challenge all willing to put their trucks to the test. A combined total of 153 trucks were run across the rollers of the two chassis dynos with 60 trucks on Friday and 93 trucks on Saturday.

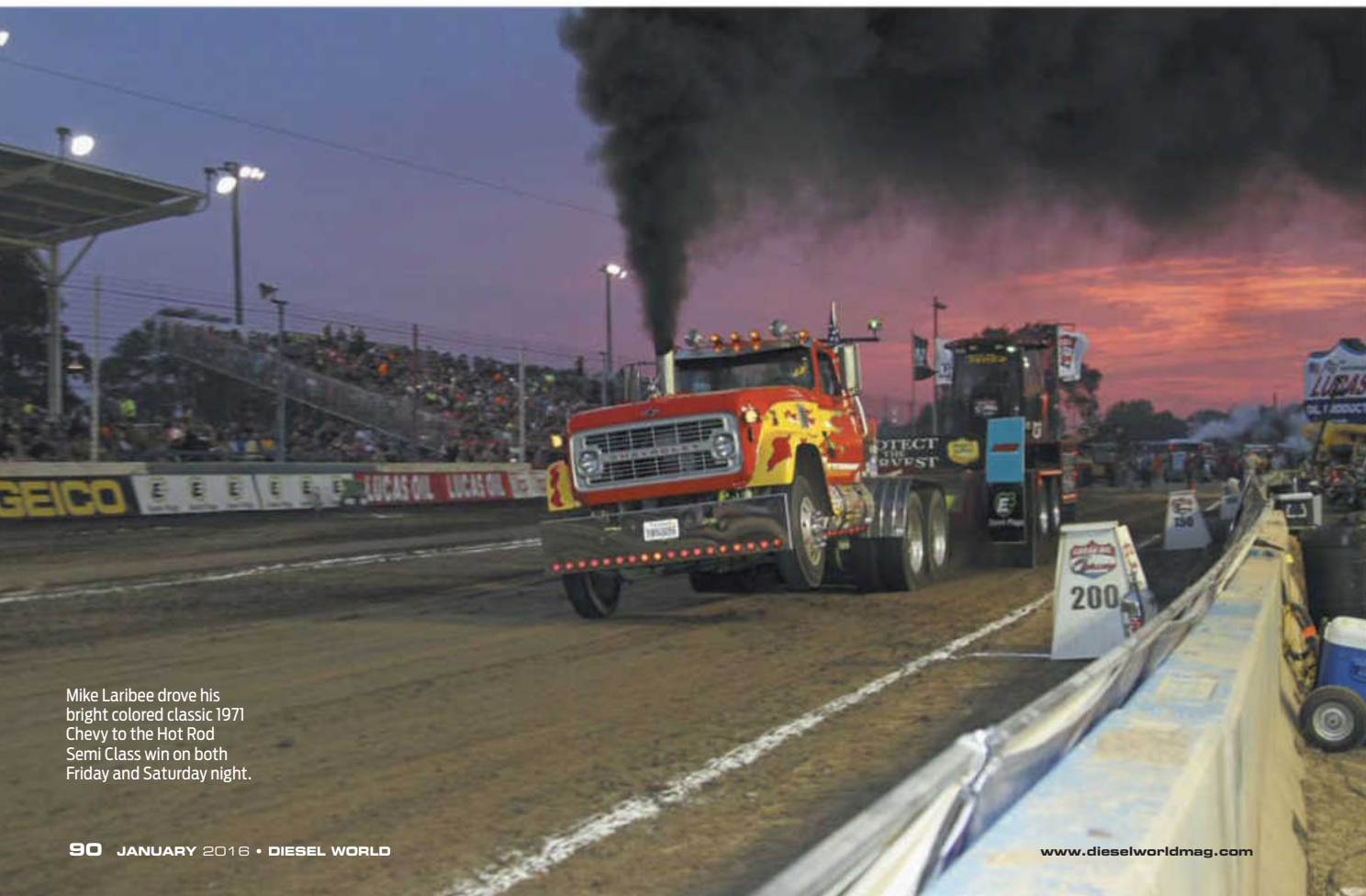
Seven dyno competitors broke into 4-digit power territory throughout the event. Friday's dyno action included three trucks that broke the 1,000-horsepower barrier; running on the Dan's Diesel Performance dyno was Derek Rose, who put up the highest number of the weekend with 1,548 hp and 2,104 lb.-ft. of torque with his Dodge. Rose was ineligible to claim the



This tandem axle former military diesel truck was on display in Saturday's Show-N-Shine demonstrating the wide variety of entries the Extravaganza brings.



Mike Jarzembka's great looking Cummins-powered 1947 Studebaker makes good power too, putting nearly 900 horsepower to the rollers.



Mike Larabee drove his bright colored classic 1971 Chevy to the Hot Rod Semi Class win on both Friday and Saturday night.



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Highest Horsepower dyno award since it is a sponsored race truck, leaving the rest of the field to vie for bragging rights. Two contenders who stepped up big time on the DDP dyno were Clay Stewart and Chaz Gilles. Stewart and his 2008 Ford topped the charts with a run of 1,182 HP and 1,843 lb.-ft. of torque. Chaz Gilles finished close on his heels with his 2002 Dodge making 1,120 HP and 1,801 lb.-ft. of torque. Meanwhile, on the DP-Tuner dyno, Keith Burwinkel was the highest horsepower winner from Friday with his 2007 Dodge making 853 hp and 1,269 lb.-ft. of torque.

Saturday's dyno competition found two 1,000+ horsepower trucks on each of the two dynos, along with several other trucks in the 800 to 900 horsepower range. Brian Randall threw down the gauntlet with his 2006 Dodge finishing at the top of the charts on both of the dynos! Randall put down 1,097 hp and 2,268 lb.-ft. of torque on the DP-Tuner dyno and 1,241 HP and 2,015 lb.-ft. of torque on the Dan's Diesel Performance dyno. Scott Wilmoth and his 2007 Dodge had a big run on the DP-Tuner dyno with 1,053 HP and 1,654 lb.-ft. of torque while Clay Stewart and his 2008 Ford fell a few horsepower short of a second win on the DDP dyno, delivering 1,209 HP and 1,892 lb.-ft. to the rollers.

## PULLIN'

Sled pulling enthusiasts at the Scheid Diesel Extravaganza can catch diesel trucks, tractors, and even semis dragging the sled across dirt in two lanes of pulling action. As in years past, the large 2.6 diesel truck class field was narrowed down with qualifying on Friday and Saturday; the top eight trucks pulling in each of the two lanes advanced into the big show each evening, along with the top-10 trucks in the PPL 2.6 points standings. Qualifying pulls got

**SATURDAY'S DYNO COMPETITION FOUND TWO 1,000+ HORSEPOWER TRUCKS ON EACH OF THE TWO DYNOS, ALONG WITH SEVERAL OTHER TRUCKS IN THE 800 TO 900 HORSEPOWER RANGE.**



Clay Stewart's 2008 Ford made nearly 1,200-horsepower taking the top spot on the Dan's Diesel Dyno Friday afternoon.



Derek Rose's BD Diesel-sponsored (therefore, not in dyno competition) drag truck made an exhibition dyno pull of almost 1,550 horsepower with over 2,100 lb.-ft. of torque, making it the highest power dyno run of the event!



Bo Layne had a rough day in 2.6 Class qualifying on Friday when something broke in the front axle of his Dodge.



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underway around 11:00 am on Friday and Saturday mornings in front of good-sized crowds in the main grandstands. Friday's top qualifiers were Chris Ryan in *Mutt* and Kaleb Barrett in *Vexed* while Saturday's top spots went to Jacob Joseph in *Stress Maker* and Jordan Kinderman in *Cummin Get It*.

As typical in sled pulling, some parts breakage is expected, but Bo Layne and Dan Vallance probably didn't expect to see their trucks towed off the track by the reach lift. Other drivers experienced hard luck out on the track, including several trucks that broke drivetrain components. The Super Stock guys weren't immune to the problems as Van Haisley and his typically very reliable *Rock Hard Ram* lost an engine during his hook Saturday night. We saw a lot of oil on the track and heard that internal components became external.



Kent Crowder drove his Scheid Diesel Super Stock truck to the win Saturday night.



Chaz Giles' bright red Dodge rocked the dyno rollers with over 1,100 horsepower Friday afternoon.



Brian Randall's 2006 Dodge averaged 1,169 horsepower between the two dynos, taking the win on each of them Saturday.

## SLED PULL

### FRIDAY

#### ARP SUPER STOCK DIESEL TRUCKS

Place	Vehicle	Driver Name	Brand	Distance
1	Trump	Shane Kellogg	Dodge	352.07
2	Scheid Diesel	Brad Ingram	Dodge	351.72
3	To Far Gone	Brion Whitrow	Dodge	343.66
4	Pulling For The Cure	Steven Nagy	Ford	341.34
5	On Borrowed Time	Shawn Hodges	Dodge	340.01

#### AIRDOG 3.0 DIESEL TRUCKS

Place	Vehicle	Driver Name	Brand	Distance
1	No Name Blue	James Barder	Ford	317.09
2	Grin N Bair It	Jon Bair	Chevy	316.28
3	Sound Of Madness	Josh Bowers	Dodge	309.82
4	Justified	Andrew Sauer	Dodge	308.2
5	Off Constantly	Curt Haisley	Dodge	305.77

#### 2.6 DIESEL TRUCKS

Place	Vehicle	Driver Name	Brand	Distance
1	Most Hated	C W Cartmell	Dodge	301.56
2	Cummin' Get It	Jordan Kinderman	Dodge	298.64
3	Wrecker	Adam Hallien	Dodge	298.09
4	Mutt	Chris Ryan	Dodge	297.63
5	All Attitude	Rob Wright	Dodge	297.07

### SATURDAY

#### ARP SUPER STOCK DIESEL TRUCKS

Place	Vehicle	Driver Name	Brand	Distance
1	Scheid Diesel	Kent Crowder	Dodge	329.44
2	Trump	Shane Kellogg	Dodge	326.53
3	On Borrowed Time	Shawn Hodges	Dodge	326.14
4	Lethal Weapon	Carl Atley	Ford	323.45
5	Up In Smoke	Joshua Deeter	Dodge	321.66

#### AIRDOG 3.0 DIESEL TRUCKS

Place	Vehicle	Driver Name	Brand	Distance
1	Grin N Bair It	Jon Bair	Chevy	340.89
2	No Name Blue	James Barder	Ford	329.13
3	Ranch Hand	Andrew Kinsley	Dodge	328.09
4	Bad Timing	Andrew Grove	Dodge	328.08
5	Burnin Burley	Jeremy McDaniel	Dodge	327.05

#### 2.6 DIESEL TRUCKS

Place	Vehicle	Driver Name	Brand	Distance
1	All Attitude	Rob Wright	Dodge	342.33
2	Most Hated	C W Cartmell	Dodge	333.02
3	Wrecker	Adam Hallien	Dodge	332.87
4	Mutt	JT Fondy	Dodge	330.44
5	Cummin' Get It	Jordan Kinderman	Dodge	328.84

James Barder had a great week-end in the 3.0 Class finishing 1st on Friday then 2nd on Saturday.





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No driver in the diesel truck classes was able to double up and win on both Friday and Saturday night, but Jon Bair, James Barder, CW Cartmell, and Shane Kellogg managed to finish 1st or 2nd each night. Barder and Bair traded positions each night in the 3.0 Class, while Cartmell finished 1st on Friday and 2nd on Saturday in the 2.6 Class. Kellogg did the same in Super Stock. Mike Larabee dominated the MAC Trailer Hot Rod Semi Class taking the win both Friday and Saturday nights with his 1971 Chevy.

## RACIN'

Crossroads Dragway is conveniently located adjacent to the Wabash Valley Fairgrounds, allowing Scheid Diesel Extravaganza to pack all this wonderful diesel activity into about 1/10 of a square mile. The close proximity also allows the Extravaganza to host drag racing on Saturday before the main sled pull of the evening, as well as a dedicated day of drag racing on Sunday. This year also marked the first year of the ODSS (Outlaw Diesel Super Series) sanctioning the racing at the Extravaganza, allowing racers to run for points and high payouts.

Saturday's racing action included qualifying for the Pro Classes (Dragster, Modified and Street) as well as full races for the 6.70 and 7.70 Index Classes, ET Bracket Class and the Big Rig Class. Then Sunday's on-track action featured eliminations for the Pro Classes and a second day of racing and winners for the Index, Bracket and Big Rig Classes. With the exception of the Big Rig Class, there were no repeat



Lavon Miller (far lane) took the 6.70 Index win when Derek Rose broke out running less than 0.02-seconds under the index time.



Fortunately, Pierce was able to walk away unharmed, but the Mustang took a beating and was towed off the track.

## DRAG RACE

### SATURDAY:

#### BD DIESEL 6.70 INDEX

Place	Driver	Vehicle	ET	MPH
Champion	Johnny Gilbert	'01 Dodge Ram 2500	6.8851	95.52
Runner Up	Rick Fox	'00 Dodge Ram 2500	6.9928	95.55

#### ATS 7.70 INDEX

Place	Driver	Vehicle	ET	MPH
Champion	Zack Danner	'06 Dodge Ram 2500	7.6922	89.42
Runner Up	Matt Maier	'97 Ford F-250	7.6846	84.60

#### FLEECE PERFORMANCE ET BRACKET

Place	Driver	Vehicle	ET	MPH
Champion	Joey Moore	'06 Dodge Ram	10.0229	68.82
Runner Up	Josh Rogers	'99 Dodge Ram 2500	10.8931	62.34

#### BIG RIGS

Place	Driver	Vehicle	ET	MPH
Champion	Rob Patterson	'00 Peterbilt 379	13.0239	57.40
Runner Up	Jason Graves	'06 Kenworth T600	13.3702	60.62

### SUNDAY:

#### MBRP PRO DRAGSTER

Place	Driver	Vehicle	ET	MPH
Champion	Jared Jones	'04 Spitzer Dragster	4.6787	159.64
Runner Up	John Robinson	'48 Fiat Altered	5.9211	82.86

#### DIAMOND DIESEL PISTONS PRO MODIFIED

Place	Driver	Vehicle	ET	MPH
Champion	Aaron Reynolds	Altered	6.0480	118.47
Runner Up	Steve Royalty	'96 Dodge Ram 1500	8.4153	107.35

#### XDP PRO STREET

Place	Driver	Vehicle	ET	MPH
Champion	Seth Sullivan	'98 Dodge Ram 2500	5.5919	138.15
Runner Up	Chase Lunsford	'01 Dodge Ram 3500	5.8619	119.08

#### BD DIESEL 6.70 INDEX

Place	Driver	Vehicle	ET	MPH
Champion	Lavon Miller	'04 Dodge Ram 2500	6.7772	101.56
Runner Up	Derek Rose	'06 Dodge Ram 2500	6.6819	104.70

#### ATS 7.70 INDEX

Place	Driver	Vehicle	ET	MPH
Champion	Doug Brarens	'39 Chevy Rat Rod	7.6742	87.37
Runner Up	Blake Miller	'04 Dodge Ram	7.6431	88.26

#### FLEECE PERFORMANCE ET BRACKET

Place	Driver	Vehicle	ET	MPH
Champion	Josh Rogers	'99 Dodge Ram 2500	10.9159	62.34
Runner Up	Tyler Radewald	'06 Chevy Duramax	8.3180	82.88

#### BIG RIGS

Place	Driver	Vehicle	ET	MPH
Champion	Rob Patterson	'00 Peterbilt 379	12.5921	55.69
Runner Up	Frank Faulds	'98 Kenworth W900	13.6651	47.31



In the Pro Modified semi-final round, Daniel Pierce got out of shape in his Cummins-powered Mustang and hit the outside retaining wall.



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Rob Patterson (near lane) drove his Peterbilt semi to the Big Rig Class win on Saturday and Sunday.

class winners on the drag strip, showing once again the competition at the Scheid Diesel Extravaganza is fierce and among the tightest in the world of diesel motorsports. In fact, Josh Rogers (in the ET Bracket Class) and Rob Patterson (Big Rig Class) were the only drivers to make the final round on both days.

Jared Jones made several amazing passes in the Scheid Diesel dragster throughout the weekend crossing the strip in the mid 4-second range at around 160 mph. In the Pro Modified Class, Daniel Pierce took a wild ride in his Cummins-powered Ford Mustang that spun the rear tires and fish-tailed into the outside barrier in a rather hard hit. Fortunately, he walked away uninjured, but the car was beat and had to get towed off

the track. In the Pro Street Class, we saw some great “heads up” racing with Seth Sullivan driving around nearly every competitor in the class and tripping the win light round after round. In the Index Classes, several wins were decided with one or more driver running under the index and breaking out and handing the win to the other driver.

Once again, attending the Scheid Diesel Extravaganza was a wild affair—one that we wish every auto enthusiast could experience at least once. We suggest you do everything possible to make it over to Terre Haute, Indiana, to check out the show for yourself; the 2016 edition will be the 20th year anniversary, and we’re sure it’s going to be an event to remember. **DW**

## SOURCES:

### CROSSROADS DRAGWAY

812.229.2167  
CrossRoadsDragWay.com

### DAN'S DIESEL PERFORMANCE MOBILE DYNO

815.245.8548  
DansDieselPerformance.com

### DP-TUNER MOBILE DYNO

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While in Tennessee for the TS Performance Outlaw event, we rounded up three excellent examples of this new trend. These guys didn't want giant lifts, mud rudder tires, and cartoonish graphics on their trucks. I reckon they just wanted trucks to work.

Check out these three trucks, and maybe they'll inspire you to build your own in similar fashion, or maybe not. That's the whole point of this custom truck hobby—build it the way you want it.

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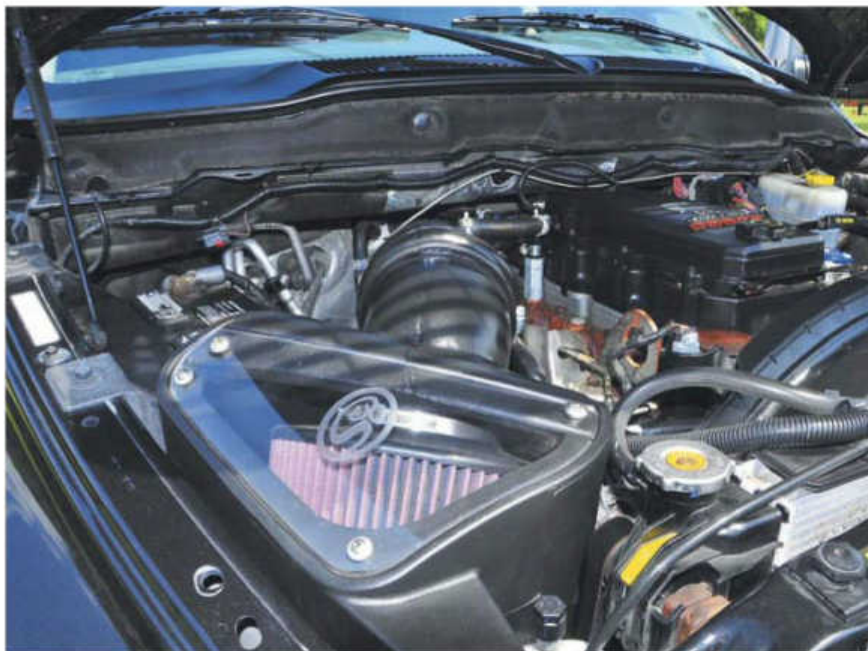


Zach Randall has previously owned a Chevy and a Ford. This is his first Ram truck, and it was built for show, but he hopes to start racing it soon. Scott Whitehead applied the metallic black paint while LSN Custom Powder Coat did the powder coating.

**“I entered my first truck show when I was 16 years old,” 26-year-old Zach Randall told us. “And I won a trophy for 4x4 trucks, and that’s when I became obsessed with modifying trucks.”**

Zach’s Ram 3500 Quad Cab long bed is painted a metallic black that’s certainly hard to keep clean, but it’s worth it when the truck is sparkling. Scott Whitehead of Butlerville, Indiana, painted the truck. All of the badges were removed prior to painting to really smooth out the appearance. Smoked LED taillights from Recon Truck Accessories blend in perfectly, as do the smoked cab lights, also from Recon.

To get the right look, the truck was lifted 6 inches and then 22-inch XD Diesel wheels were installed. Nitto Mud Grappler tires were used for the combination of looks and traction.



An S&B intake system ensures the Cummins engine gets plenty of fresh, cool air. EFILive tuning wakes the truck up while ARP head studs keep the cylinder head where it belongs.



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## Specifications 2009 Ram 3500 6.7L Cummins

### PERFORMANCE ADDITIONS:

ARP head studs  
S&B intake  
Modified Holset HE 351 turbo: makes 40 psi of boost.  
EFILive tuning by Anarchy Diesel  
5-in. Diamond Eye exhaust  
Kennedy clutch single-disc

### EXTERIOR MODIFICATIONS:

Debadged with new custom black metallic paint  
6-in. lift kit  
22-in. XD Diesel wheels  
37-in. Nitto Mud Grapplers  
Recon smoked LED taillights  
Recon smoked LED cab lights  
AMP Research PowerSteps  
Kleinn Air Horn



A 6-in. lift kit made room for the bigger tires, and let the truck sit at a height that seems appropriate for an HD truck.



The 37-inch tall Nitto Mud Grapplers have the look Zach was going after. He put them on 22-in. XD Diesel wheels.



An Edge Insight CTS keeps track of everything that's power train related.

The 6.7 Cummins six-cylinder diesel engine was beefed up with the addition of ARP head studs. An S&B intake makes sure plenty of fresh air gets into the engine. A modified Holset HE 351 turbo provides 40 lbs. of boost.

The tuning is handled with EFILive, custom tuned by Anarchy Diesel. An Edge Insight CTS keeps tabs on everything that's going on with the truck. A 5-inch turbo-back exhaust system from Diamond Eye was ceramic coated in black by LSN Custom Powder Coat for a unique appearance. The factory G56 six-speed transmission uses a Kentucky Clutch single disc.

If the truck doesn't seem to be getting enough attention, Zach can toot his Kleinn air horns and make sure he's on everyone's radar.

Of course, Zach is not "done" with this truck: He has plenty of plans for it in the

near and distant future. He actually owns a set of AMP PowerSteps, but just didn't have them installed in time for our photo shoot. Traction bars were being fabricated for the truck as well. Also in the works is a custom stainless steel box that will house the air compressor and air tank for his train horns. The lid has the name of the truck (*Disorderly Conduct*) laser cut into it with blue LED accent lights behind it.

Down the road, Zach is planning to work on improving the fuel system with bigger injectors, putting a larger turbo on the truck and upgrading the stereo system. The goal is to get the truck to a point where it's able to participate in sled pulls and drag races.

Zach thanks Outlaw Diesel Performance, Biehle Motorsports, LSN Custom Powder Coat, and Kentucky Clutch because without them, the truck would not be what it is today.

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# BUDGET BRAWLER



John Roberson purchased a lower trim level to save money but then customized the truck the way he wanted it to look.

**A**t just 23 years old, John Roberson is the owner of Outlaw Diesel Performance in Greenfield, Indiana, but that shouldn't be surprising, as he's been tinkering with trucks since he was 16 years old. His shop carries thousands of aftermarket parts for Power Stroke, Duramax and Cummins owners, plus they do anything from routine service work to major performance overhauls at ODP.

"Like most people," John told us, "I was on a budget when building my dream truck." He added: "While it was still expensive, I saved more than \$5,000 by purchasing a Premium XLT model to save some money over the Lariat and Platinum



John wanted to build a nice-looking truck on a reasonable budget, and he succeeded in every way.



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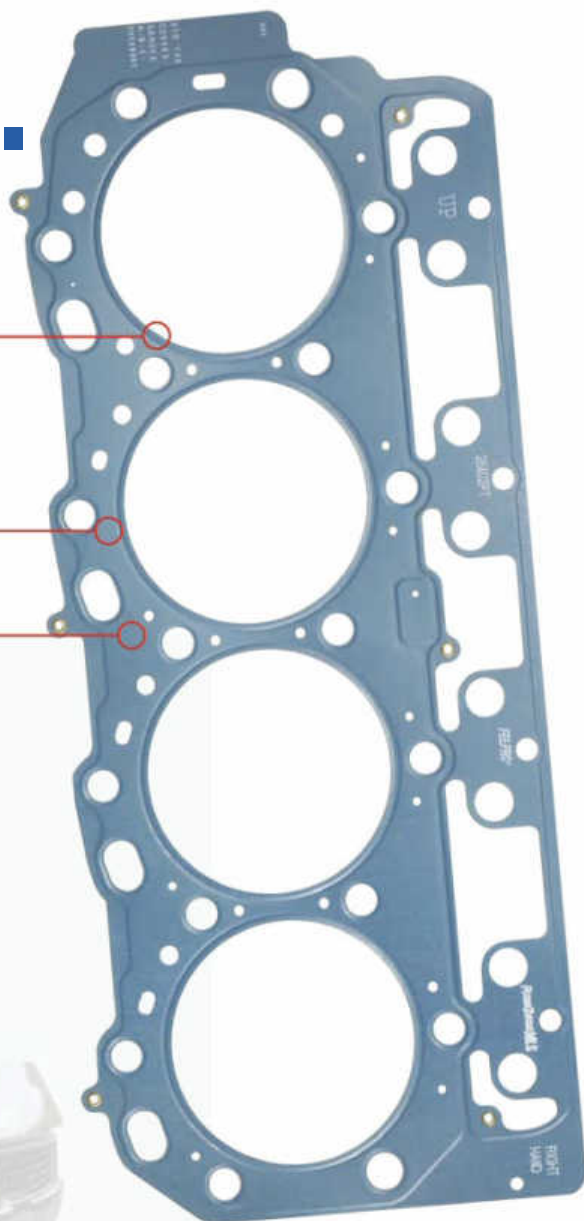
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## Specifications 2011 Ford F-250 6.7L Power Stroke

### PERFORMANCE ADDITIONS:

S&B cold air intake  
5-inch Flo-Pro exhaust system  
H&S Mini Maxx tuner

### EXTERIOR MODIFICATIONS:

Rough Country 3-inch lift kit  
35-inch Toyo Open Country M/T tires  
22-inch BMF Novakane wheels  
AMP Research PowerSteps  
Recon smoked cab lights and turn signals  
Rigid Industries 40-in. LED light bar

### MISCELLANEOUS:

Katzkin upholstered seats  
Kicker speakers  
Ride Rite supplemental air bags



H&S Mini Maxx.



BMF 22-in. Novakane wheels hold 35-inch Toyo Open Country M/T tires.



A Firestone Ride Rite air bag kit allows for serious towing with the truck. John pulls both a gooseneck and a race trailer.

## "I WANTED THIS TRUCK TO BE THE ULTIMATE DAILY DRIVER AND TOW RIG"



Color-matching the bumpers, grille, badges and then blacking out the inside of the headlights really transformed this 2014 Ford F-250 to a custom ride. The 40-inch Rigid Industries LED light bar fit inside the bumper after the factory tow hooks were removed.



A 3-inch lift kit from Rough Country (with the addition of new front coils) was a major priority for the Super Duty build.

models." This way, John could build the truck the way he wanted it.

He couldn't let the truck stay at the factory ride height, so he installed a complete 3-inch lift kit from Rough Country. With more room in the fender wells, he then added a set of 35-inch Toyo Open Country M/T tires on 22-inch BMF Novakane wheels. AMP Research PowerSteps make it easier to get in and out of the truck.

For powertrain upgrades, John kept it simple. He put on an S&B cold air intake and a 5-inch aluminized Flo-Pro exhaust system with a 6-inch stainless steel tip. Then he added an H&S Mini Maxx tuner to bump up the already ample horsepower and torque. But John didn't go any further with the power upgrades, so he was able to retain the factory transmission.

Appearances are important to John, so he spent a lot of his time and budget on making the pickup more personalized to what he wanted to own. For example, he took the headlights out and split the housings open, then painted them black and installed LED headlight bulbs. At the rear of the truck, John smoked the tail-lights with a mixture of black and clear coat, then put Recon Truck Accessories smoked cab lights and LED turn signal markers on the Super Duty. A 40-inch LED light bar was installed in the front bumper (he had to remove the tow hooks) and John used the Ford factory up-fitter switch to turn them on and off.

But he didn't stop there. John color-matched the grille, bumpers, badges and handles. It nearly looks like a factory job, and many people have no idea how much work went into the color matching.

Inside the cab, John installed Katzkin black leather on the heated seats and Weather Tech floor mats. He upgraded the speakers to Kicker and added a few LED interior lights too.

The truck is "done," but John is thinking about some future mods like One Up Offroad traction bars and a Transfer Flow fuel tank. But, we're willing to bet that those won't be the last parts he gets for his F-250.





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# GENIUS CHEVY



Rich Strube's 2011 Chevy was built as a way for his wife to haul the kids around and advertise the quality work that comes out of Richie's Truck & Auto at the same time.

**R**ich Strube has built a lot of trucks in his time. First, when it was his hobby, then when it became his profession about 20 years ago with Richie's Truck & Auto in Hicksville, New York. As the owner of a shop that builds trucks, Rich needs to make sure that he and his wife drive around in something that makes it clear that his shop can build high-quality vehicles. So, Rich scrutinizes his builds a bit more than the average guy on the block. He's very careful to pick out excellent quality parts that work in harmony with each other, as Rich is quick to quote Albert Einstein: "The difference between genius and stupidity is that genius has its limits." Rich is always careful not to go too far. He strikes a balance with his trucks that continues to impress.

Rich bought the truck for his wife to carry their kids around in, make parts runs for the shop and participate in the occasional drag race (yes, she races it). The truck has met the dyno, and it has driven cross-country three times (there's 85,000 miles on the odometer).

To make sure the Chevy's front end keeps pointing straight down the highway, Rich installed a set of Kryptonite tie rods, and he also custom fabricated a set of 2-inch DOM 0.250-wall traction bars that are 7.5-ft. long (although they're not currently installed on the truck).

The truck had to be lifted; no doubt about that in Rich's mind. So he turned to Cognito for the company's 7 to 9-inch suspension system. He had it powder coated red before installing it and that really

makes the Cognito parts stand out. Rich painted the caliper covers to match the truck too. Fox 2.0 shocks with remote reservoirs smooth out the ride and look great doing it. With the truck up in the air, Rich put a set of 18x9 black Fuel Maverick wheels that were then wrapped with a set of 34x12.5-18 Nitto Terra Grappler tires.

The Duramax LML diesel engine puts out about 980 lb.-ft. of torque and 486 horsepower at the wheels, and Rich is happy to explain how he got to those numbers. First, he put on an aFe Stage 2 intake system and a Mishimoto intercooler. Then, Rich installed an intake manifold from DHD and a 150 TI lift pump from FASS. Rich implemented an H&S Black Maxx tuner/monitor in the truck and has also added a Snow Perform-

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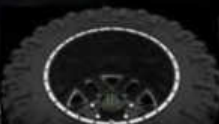




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539  
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## Specifications:

### PERFORMANCE ADDITIONS:

Multiple Sun Coast transmission upgrades  
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aFe Stage2 cold air intake  
150 TI FASS lift pump  
H&S Black Maxx tuner  
Snow Performance water-methanol injection  
4-in. MBRP exhaust  
Mishimoto radiator  
Mag-Hytec differential cover

### EXTERIOR MODIFICATIONS:

Rigid LEDs everywhere  
7/9-inch Cognito lift kit  
Color-matched suspension parts  
18x9 Fuel Maverick wheels  
34-inch Nitto Terra Grappler tires  
Kryptonite tie-rods  
Rhino lined bed  
T-Rex billet aluminum grille  
Recon smoked tail lamps

### MISCELLANEOUS

Truxedo tonneau cover  
Harmon Kardon and Sony Xplode speakers  
with a Bose amplifier



Check out how nice the Mag-Hytec rear differential cover looks when it's painted red and offset with flat black components.



The Cognito lift kit includes a new upper A-arm and remote-reservoir Fox shocks. The sway bar was powder coated, along with the Cognito spindles. Rich took two years to "finish" this truck. We bet, however, that there's more to come.



The factory torsion bars also look infinitely better when they're contained by the red powder coated parts from Cognito.

ance Stage 3 water-methanol injection kit. The Allison six-speed automatic transmission was upgraded with a slew of Sun Coast parts, all finished off with a 4-inch dual exhaust constructed out of 409 stainless steel from MBRP.

"The Crew Cab short bed pickup has a T-Rex grille with a billet Chevy Bowtie emblem in black for a touch of class. The front bumper was upgraded with the addition of four Rigid Dually lights, while the rear bumper was fitted with Rigid SRQ backup lights on the bottom"



The addition of a black billet bowtie on the billet grille is a nice classy touch.



Rigid Dually lights help light up the road at night.



The 34x12.5-18 Nitto Terra Grappler tires are wrapped around a set of black Fuel Maverick wheels.

"More Rigid lights were installed under the rails of the bed for illuminating the box at night. The bed was also sprayed with Rhino Liner to keep it looking good."

Another good reason for building trucks the way his customers like them is to better understand how the parts work and what can be improved. As Rich was explaining this to us, he quoted Confucius: "Hear and you forget; see and you remember; do and you understand." Well, Rich certainly understands trucks. You can quote us on that one. **DW**



An H&S Performance Black Maxx tuner gives the truck some much needed horsepower all day long while the Snow Performance water-methanol injection kit keeps EGT down and adds roughly 75 hp at the same time.





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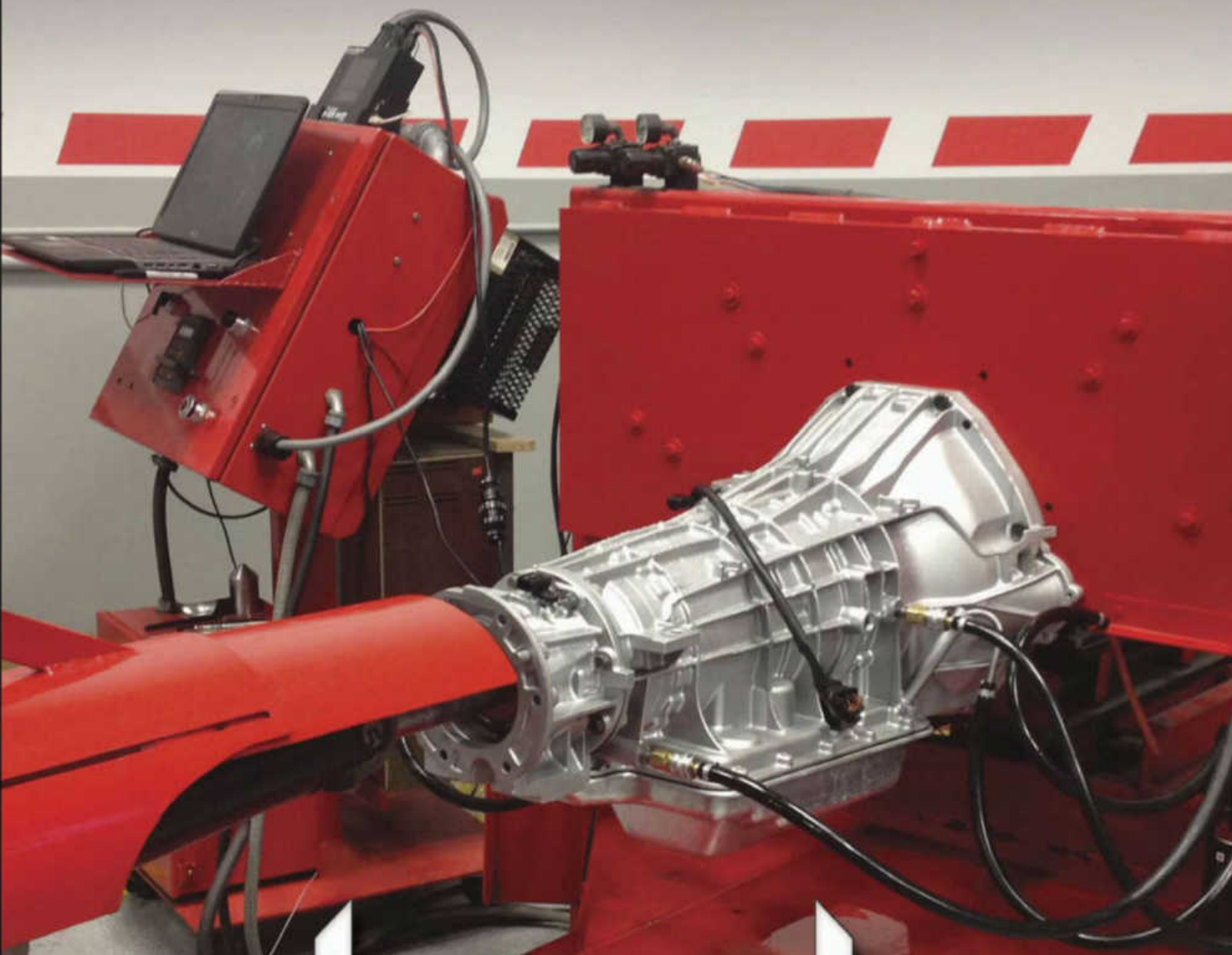
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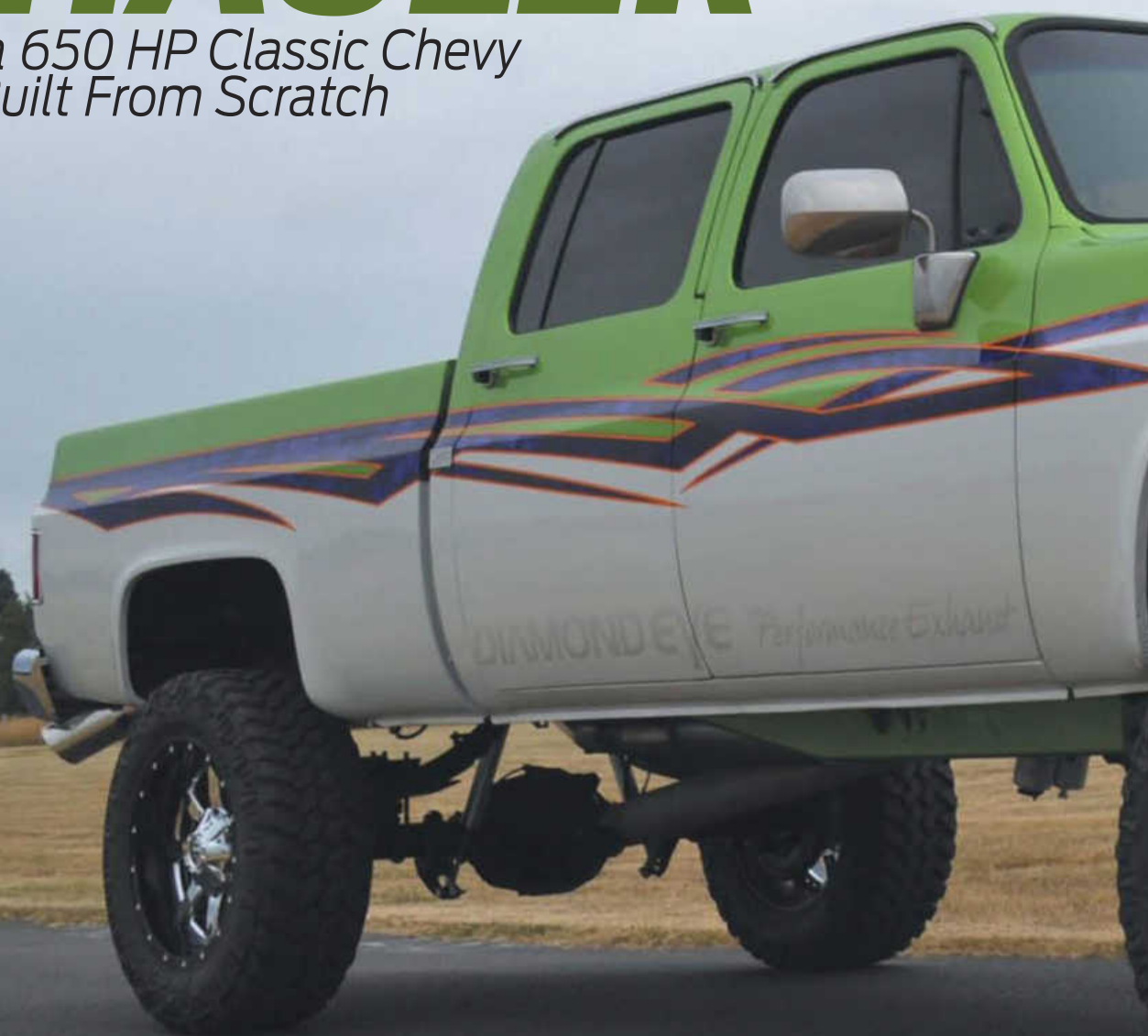
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# **HOMEBREWED** **HAULER**

*a 650 HP Classic Chevy  
Built From Scratch*





BY JASON SANDS  
PHOTOS BY JASON SANDS

**N**ormally, people don't give diesel-powered '80s Chevrolet trucks a second look, but that's not the case with Bennet Leffler's wild '89 C30. Bennet needed a truck to tow his boat and promote his shop, Performance Authority, in Bend, Oregon. Being a do-it-yourself kind of guy, he decided to build his own diesel-powered pickup, rather than just buy something off the lot and bolt-on parts. When creating his tow rig, he didn't limit himself to one brand, but rather, he used the best parts that GM, Ford, and Dodge had to offer.





One of the coolest aspects of Bennett's conversion truck is the radius arm front suspension, which Bennett designed himself. Using custom coil buckets and radius arms, an '05 Super Duty front axle was mounted underneath the Chevy, taking it from two-wheel drive to four-wheel drive.



Bennett's Chevrolet looks like it was made for the 5.9L Cummins engine. Bennett made his own modular motor mounts for the swap, which can be used to put a Cummins, Duramax or LS engine in GM truck frames.

## 2WD LONG BOX

Bennett first started with a 1989 Chevy body and frame although it all needed to be modified to suit his needs. The truck was a two-wheel drive long bed, and what Bennett really wanted was a four-wheel drive short

bed, so that's what he made. After cutting the frame and fitting a short bed, the four-wheel drive conversion was next. "Ford (Super Duty) axles are everywhere; they're strong, and they have disc brakes," noted Bennett about Ford axles. Both front and rear ends came from





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# HOMEBREWED HAULER



Much of the TIG welding on the truck was performed by ThreeSixNine Custom Fabrication out of Bend, Oregon, including the custom 18-gallon fuel tank, which feeds a 150-gph FASS lift pump.



The Cummins itself is based upon a '00 Ram engine, which has numerous upgrades such as Mahle pistons, a Hamilton Cam, 120-pound valve springs and ARP head studs.



Towing was high on the list of uses for the '89 Chevy, so Bennett made sure the Cummins engine had plenty of air to keep EGTs down. A R700 turbo kit from BD Diesel Performance uses a 58mm small turbo and 71mm large turbo to help the engine produce approximately 650 rear-wheel horsepower.





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Bennett went with a Ford axle for the back of the truck too, which is suspended from the Synergy Green frame with a set of Superlift leaf springs and Bilstein 5100 reservoir shocks.



The rear of the Chevy hides a few more surprises: The rear axle was upgraded with a street-friendly True-Trac locker, as well as a Mag-Hytec rear differential cover to keep fluid temperatures down.



Chrome wasn't neglected in the build, as new front and rear chrome bumpers keep the Chevy's classic looks alive. In addition to the Classic Industries front and rear bumpers, the front of the truck also received a CI grille.

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IN THEIR  
EFFICIENCY  
RANGE"**

4x4 Fords, with a Dana 60 up front and a 10.5-inch disc brake axle in the rear.

With the axle choices sorted out, Bennett still needed to mount them, so here's where he got creative. "I built by own spring buckets, radius arms, and track bar mounts to locate the Dana 60 under the front end," stated Bennett. He also added that with enough forethought, he was able to make the whole setup virtually a bolt-on deal, with just some drilling (and no welding) required. The setup uses factory Ford springs along with Bilstein shocks and gives the truck about a 4-inch lift as compared to a stock

four-wheel drive. The rear axle received a Truetrac from Detroit locker before it was swung under the rear of the Chevy, using a set of 6-inch Skyjacker leaf springs and Bilstein shocks to mount it.

### 5.9L CUMMINS

With a four-wheel drive truck at the height he wanted, Bennett then turned to the drivetrain. When Bennett was shopping for ideas for an engine, the simplicity of a Cummins power plant won out, but again, Bennett had to add his own tweaks to the build. The long block is a 5.9L Cummins out of a '00 Dodge that has been rebuilt with



Like the rest of his truck, the front end of the Chevy is a mix and match of parts, which somehow end up looking (and working) perfectly.







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Mahle pistons, a Hamilton Cam, 120-pound valve springs and ARP head studs.

While Bennett liked the airflow capabilities of the 24-valve head, he didn't like the VP44 that came with it, so for added power potential and reliability, he made the switch to an earlier style P7100 injection pump off of a 12-valve engine. The pump was swapped onto the engine with a 12-valve front cover, and Haisley stainless steel 0.093-inch injection lines, and features 4,000-rpm governor springs, a Mack rack plug, .022 delivery valves, and a #5 fuel plate. It feeds fuel to a set of Stage 2, 24-valve injectors from Industrial Injection, which has had its pop pressures re-adjusted for the p-pump.

## COMPOUND TURBOS

Bennett was building the truck mainly as a tow rig, so going straight to a compound turbo setup was an easy choice. Compound turbos build more boost with less fuel and keep both turbos smack dab in their efficiency range, so it was the optimal choice for Bennett. "I have a nice truck, and I don't need soot all over it, so I wanted the turbos to light quick!" said Bennett. This meant a traditional set of towing twins, in this case, a wastegated 58mm S300 from BD over a 71mm large turbocharger. Even with the small-ish turbos, boost comes in at 58 psi, and the engine has enough air to keep EGT at a safe 1,350 degrees at wide-open throttle.

## ALLISON 1000

Since Bennett was building his C30 from the ground up, he was fairly open as far as transmission choices went. He had always liked the way that Allison transmissions had shifted in his previous trucks, so after talking to Destroyed.com, he made the decision to run a six-speed Allison 1000. For the adaptation to the Cummins, Destroyed supplied the adapter plate, as well as one of its own stand-alone Allison controllers that allowed Bennett to tune the transmission to the shift specs he needed. A GM 263 transfer case was used behind the built Allison, which connects via Duramax aluminum drive shafts to the front and rear axles.

## PAINT, PAINT, AND MORE PAINT

At this point, we have to talk paint, as one of the perks of building a truck from scratch is painting, chroming, and powder coating everything you want, which in Bennett's case, turned out to be just about everything: The green that makes up the frame, accessory pieces and accents on the truck is based upon a Synergy Green with some blue mixed in. The bright white on the body is a Pearl White, and the purple marbling was a custom color that was created in the paint shop. While Bennett had plenty of input, he was also quick to credit Greg's Custom Creations in Bend, Oregon, for the awesome work. With a truck this nice, the



A big part of Bennett's build was incorporating the Allison 1000 transmission behind the Cummins engine, which started with an adapter plate from Destroyed. The underside of the truck also gives a glimpse of the workmanship that went into the truck from the frame on up.



The PPE pan on the Allison 1000 hides an ATS Stage 4 transmission and triple disc torque converter. The Destroyed-controlled transmission has no issues with anything the Cummins can throw at it.

slightest ding was unacceptable, so the bumpers and the grille were all new pieces from Classic Industries.

While we come across swap vehicles quite often, Bennett's C30/K30 creation is truly more than the sum of its parts, and is one of the nicest creations we have seen in a while. With more than 650 hp on tap, the latest in transmissions and four-doors in classic body lines, Bennett designed and built quite an impressive ride. **DW**







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# ALTERED STATE

TEXT BY JASON SANDS  
PHOTOS BY JASON SANDS  
AND ERIC SULLIVAN

John Robinson  
and his  
6-second,  
2,500 HP,  
Cummins-  
powered  
'48 Fiat

One of the most colorful characters in diesel drag racing today is John Robinson, who campaigns the Power Service Altered that's run a best of 6.72 seconds at 212 mph in the quarter mile. John is also known for his off-the-track antics, whether it's blasting his golf cart's train horns at other racers, or flying remote control helicopters into their pits. "This racing stuff is supposed to be fun," commented John, "It's serious business, of course, and money and egos are involved, but we all got into this to have a good time, right?" John's easygoing nature and honesty have earned him fans throughout the country, where he can be seen running in the Top Dragster class at a variety of NHRA events.







The fast '48 Fiat-bodied altered has a chassis built to Top Fuel Funny Car specs and comes in at 2,670 pounds with driver and fuel. The engine responsible for the fast times is a 2,500 horsepower Cummins-based power plant that's built by Scheid Diesel. Capable of 6,000 rpm engine speeds and more than 3,000 lb-ft of torque, it's truly a monster.

## "2,500 HORSEPOWER ALUMINUM-BLOCK CUMMINS FROM SCHEID DIESEL"

### HUMBLE BEGINNINGS

While John's '48 Fiat-bodied altered is extremely impressive, John's drag racing experience came from humble beginnings. To promote his shop, Texas Diesel Power, John built a dragster with a mild Cummins engine back nearly a decade ago. "I think our first pass was in the '9s, if I remember right...a lot of people thought that was pretty slow for a dragster, but every pass we made progress and learned something," said John. Eventually, on towing twins and a 47RH-based transmission, John's dragster dipped into the 8-second zone, catching the attention of some curious companies.

### FUNNY BUSINESS

In 2009, John teamed up with Power Service Diesel Additives to campaign something a little different...a diesel funny car. Having a sponsor also meant that John could step up his engine and transmission program to a 1,800-hp monster backed by a Powerglide, then later a Lenco transmission. The '8s were soon a thing of the past, as John quickly went from '8s to '7s in his new car. "We learned a lot and got a pretty good handle on things with that car," said John. "We went a best of 7.40s at more than 180 mph, but that still wasn't fast enough to hang out with the NHRA guys, so we decided to



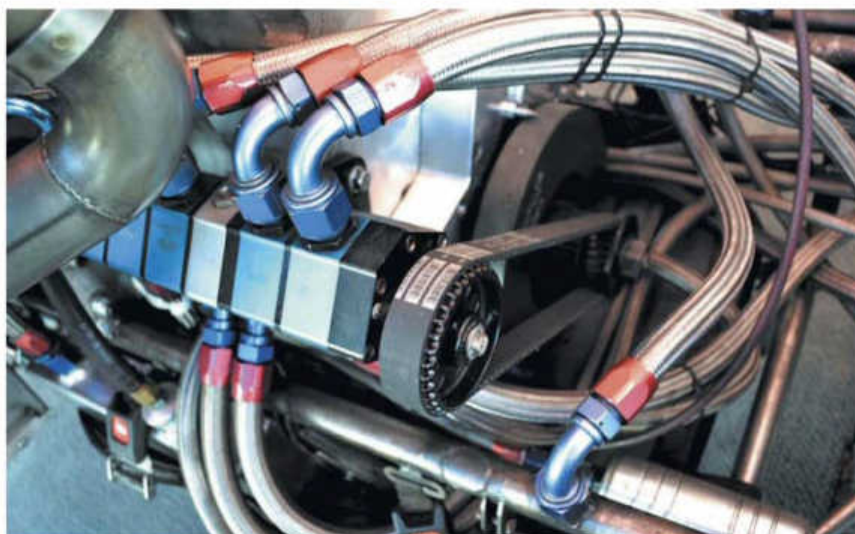




John's 6-second office is quite sparse, with only the bare essentials needed to go a quarter mile at a time. The fit inside the Funny Car Cage is a tight fit, and buttons and handles for shifting, boost management and deploying the parachutes are all close within reach.



The Cummins aluminum block cuts more than 100 pounds of weight as compared to iron and is filled with only the best parts. A 6.7L crank, Scheid connecting rods, and 12:1 compression Arias pistons give the engine a 6.4L displacement. Upper-end parts include a Scheid roller camshaft and 12-valve head from Hamilton Cams, which flows nearly twice as much air as a stock cylinder head.

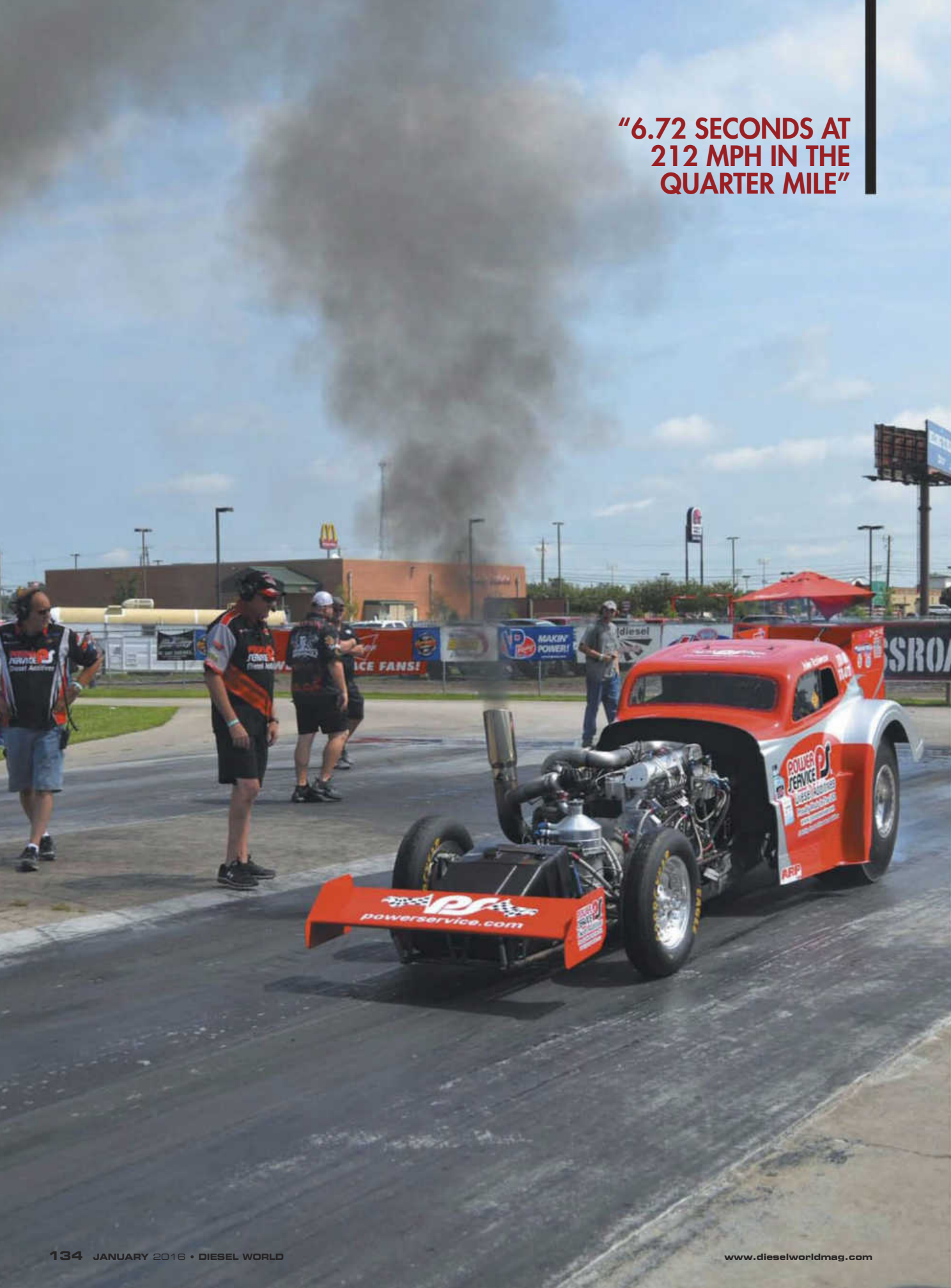


A dry sump oiling system keeps the oil pressure up no matter if the engine speeds are high or low. Also visible in the photo is the Fluidampr balancer that ensures happy and healthy bearing life even with consistent 6,000 rpm engine speeds.



Another safety feature are these cool pop-off valves designed to release pressure in case of a failure that leaks compression into the oiling system. If crankcase pressure exceeds 15 psi, they'll pop up, and keep oil losses to a minimum, as well as ensuring no fluid hits the track surface.

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## TOP FUEL

Although Top Dragster is a bracket class within the NHRA, only the quickest 32 cars qualify, and often the bump spot is in the low 7 or high 6-second range. If John wanted to run in the NHRA, he would need to be able to hit consistent high '6s in the quarter mile. "With Dan (Scheid) already running '6s in his rail, I knew exactly who I should talk to," said John.

With a Top Fuel Funny Car chassis and the Lenco transmission sorted out,



Safety is integrated into the turbo system, just like the rest of the engine. If John ever gets out of control, he can use this air shutoff to cut the engine's power.



John's altered has a very extensive breather system to help reduce crankcase pressure to nearly nothing. One breather is on the dry sump can, while two other vents extend from the engine, through the frame rails and into a catch can back by the rear axle.



Most p-pump engines are based upon the Bosch P7100 pump, but John's engine uses a highly modified P8600 unit, with 14mm plungers, a custom pump camshaft, and coatings throughout the unit. Built by Scheid Diesel, the injection pump is capable of more than 1,000 cc of fuel flow.



Massive injectors are needed to support 2,500 horsepower, and again, Scheid Diesel got the call. Compared to stock units, the triple-feed 5x30 injectors are a whopping 1,100 percent larger than factory sticks.



A simple turbo setup isn't in the cards when this type of horsepower is involved. Compound turbos combine to send 143 pounds of boost into the engine. The "smaller" of the two chargers is an 88mm turbo from Precision Turbo, while the large turbo is a 114mm Holset HX82-based turbo.





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With an engine program like John's, airflow modifications are incorporated into virtually every part of the engine. A side-draft individual runner intake from ZZ Fabrications is a big step up from the stock shelf intake and ensures that plenty of air gets fed to the Hamilton Cams cylinder head.



Early on in his racing career, John had a lot of broken parts from 2,000-plus degree exhaust gas temperatures. With the new engine, John wasn't taking any chances and runs his 10 nozzle, 1,100-psi water injection system quite aggressively. With more than a gallon of water injected per 6-second pass, John's engine uses nearly as much water as it does fuel.



Quite a rear axle is needed to handle 3,000lb-ft. of torque, and the 1.08-second 60 ft times that come right after the launch. A Strange top-loader with 2.90 gears, straight-through 40 spline axles gets the call to handle the abuse. It's connected to the transmission via a 1-3/4 inch coupler and is hard mounted to the chassis without any type of suspension other than tire and chassis flex.

all John needed was the power to run the number: "Power Service helped us out big time on that one," said John, "We couldn't have built our current combination without them." While 1,800 horsepower might seem like a lot, John took the plunge and upgraded another 700 horsepower—to a 2,500 horsepower aluminum-block Cummins from Scheid Diesel. "I'm proud of the engine we built for the Funny Car, but I'm also proud to say we now have a Scheid motor," said John. The engine has been ultra-reliable, and it was just what the team needed for that extra push into the 6-second zone.

Since Funny Cars aren't allowed in Top Dragster, John switched the body over to a '48 Fiat, so he would be legal at both NHRA events and diesel outlaw races. Even with a mild tune up, the new engine has pushed the car to consistent high 6-second passes, with a string of '6.80s and a best of 6.72 at 212 in the quarter. "We're still figuring things out, and we still haven't really leaned on it hard," said John. He thought for a second then laughed: "Our EGTs are only about 1,100-1,200 degrees at the end of the track; you know we got



**"WE'RE STILL FIGURING THINGS OUT, AND WE STILL HAVEN'T REALLY LEANED ON IT HARD"**

**—JOHN ROBINSON**

those parachutes to tow!" With the dip into the 6-second zone also came a lot more exposure, including a recent NHRA "Best Engineered" award. "The fans just love this thing, especially if they've never seen anything like it before...we need more

of these things out here!" said John. With his recent success, John shows no sign of slowing down. "We're going to keep doing this until we get tired of it, but as of right now, we're just getting started. You wait and see!" **DW**



A data-logging acquisition system is crucial to tuning, engine performance, and chassis tuning, so John turned to RacePak and helped develop an Iq3 system specifically for diesels.



Moving away from a diesel transmission meant going to a strong and light Lenco CSI three speed transmission. Connecting the Lenco to the engine is a Browell bell housing and a 4-disc 10.7-inch Crower pedal clutch.



A Steed Speed exhaust manifold with a T6 flange is both larger, better flowing, and tougher than a factory Cummins exhaust manifold. For John's engine, it was the perfect choice.



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ADJUSTABLE COLORS  
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Award Winner.



Dyno - (+80hp) Actual results  
on 2011 6.7L Power Stroke.



System - New Plug-n-Play EZ  
Installation. No wiring or drilling.  
Applications for all Cummins,  
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diesels.



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WHY PEOPLE LOVE AFC LIVE!**

I Have the AFC LIVE stage 2, and love it, you max out your afc and you can drive with no smoke and full power by far the best bang for the buck out there!

-Rick -Competition Diesel Member - turbodude51

"This is definitely a game changer in the sense that it can be tuned clean until you flip the switch and bam, full power mode when you need/want it."

-Cummins Forum Member alwaysdiesel

"I have one on a p-pumped truck and it works awesome! I would recommend it to anyone with a modded 12 valve."

-Instagram Follower ldespain87

"I am really impressed with this tuner. The install was painless and it works really well. I can go from stock and smokeless to a smoky 400hp and anything in between just by turning two knobs anyone with a 12v should be running one of these."

-Cummins Forum Member JT422

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# Total Control

## BD's TapShifter for Early Model Year Duramax

TEXT AND PHOTOS BY JASON SANDS

**O**ne of the cooler features of 2006-and-up Duramax-powered GM trucks is the shifter, which allows drivers to manually shift up and down gears, making the Allison automatic feel more like a manual transmission. This is especially helpful when passing cars on two-lane roads, trying to keep exhaust gas temperatures down while climbing hills, or while dyno testing, sled pulling, or drag racing a vehicle.

Unfortunately, 2001-2005 truck owners were left out in the cold, until just recently, when a number of companies started marketing kits that could convert the early-style shifters, enabling any Duramax enthusiast to tap away up or down to their heart's content. The shifter we chose to install was BD Diesel Performance's offering, which we bought because of its competitive pricing, excellent instructions and simplicity of installation.

We performed the install on Brian Peterson's 2003 Chevy, which with a hot tune, aftermarket turbo and fueling upgrades, could definitely benefit from manual controls. Brian reports that since the installation, he's now able to keep the rpm up in spirited driving situations to make sure the aftermarket Garrett GT4094 turbo always stays up on boost, making passing and towing a breeze. Best of all, the install only took about thirty minutes and required only simple hand tools. Here's how it went: **DW**







**1** The first step of the install involved disconnecting the vehicle's batteries, negative sides first, then moving inside and removing the snap-in trim around the instrument cluster, plus the cover down by the knee bolster.



**2** The factory shifter, which just has a tow/haul button (but not a tap function) will be removed in just a few more steps.



**3** To gain access to the shifter, the steering column cover must be removed. When doing this step, take extra care not to break the clips on these covers. Only slight force is needed.



**4** With the cover off, the stock shifter can now be removed using a T27 Torx bit.



**5** With a quick shifter swap, the updated TapShifter changes out exactly into the same location and is then secured with the same T27 Torx bit.



**6** After the new shifter is installed, the steering column cover is snapped back into place. We were careful not to catch or pinch the rubber shifter boot on anything at this point in the install.



**7** With the column cover back on, the rest of the dash was then reassembled, which took just a few minutes.



**8** Next, a little bit of wiring needs to be done. The TCM (which is located up on the driver's side next to the radiator) needs to be accessed to complete the install.



**9** The factory red retainer is removed, and a BD-supplied blue retainer is installed to enable the TCM to function with the new and improved shifter.



**10** The BD harness is then connected to the engine harness and TCM to complete the updated wiring.



**11** With the new TapShifter in place, owner Brian Peterson can now select the gear he wants for towing, passing, or in this case, dyno testing the truck. Holding the truck in one gear allows the driver to build boost and results in some slightly better power numbers than the truck previously put down.

## SOURCES

**BD DIESEL**  
DieselPerformance.com

**BROWN'S DIESEL**  
559.867.1111  
BrownsDiesel.com



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Our bypass-style system filters a small amount of the coolant on each pass and removes all solid particles. Install a coolant filtration kit in order to extend the longevity of your cooling system components.

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### Sinister '01-'15 Duramax CAT Fuel Filter Adaptor

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The Sinister CAT Fuel Filter Adaptor allows you to install a 2 micron CAT fuel filter with ease.

\*Also available for '04.5-'07 Cummins

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**1500 WATT DUAL TEMPERATURE HEAT GUN (572°/1112°)**

drillmaster

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**WOW SUPER COUPON**

**44", 13 DRAWER INDUSTRIAL QUALITY ROLLER CABINET**

Customer Rating ★★★★★

**SAVE \$660**

• Weighs 245 lbs.

**\$36999** comp at \$1029.99

LOT 62744/68784 shown  
69387/62270

42565219

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**SUPER COUPON**

**13 PIECE 1/2" DRIVE DEEP WALL IMPACT SOCKET SETS**

PITTSBURGH

TYPE	LOT	COMP AT
SAE	67903/69280	\$46.97
	69333/69560	
METRIC	67904/69279	\$49.99
	69332/69561	

Item 69560 shown

**YOUR CHOICE \$1999**

425671732

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**12 TON HYDRAULIC PIPE BENDER**

Central Hydraulics

LOT 62539  
32888 shown

**SAVE \$90**

**\$8999** comp at \$179.99

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LOT 69227/62116/62584  
62590/68048 shown

42565280

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**CAN AND OBD II PROFESSIONAL SCAN TOOL**

CENTECH

LOT 62120  
60694 shown

Customer Rating ★★★★★

**SAVE \$260**

**\$8999** comp at \$349.99

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**SUPER COUPON**

**12" SLIDING COMPOUND DOUBLE-BEVEL MITER SAW WITH LASER GUIDE**

CHICAGO ELECTRIC

LOT 69684 shown  
61776/61969  
61970

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**\$13499** comp at \$399

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**WOW SUPER COUPON**

**1/2" INDUSTRIAL QUALITY SUPER HIGH TORQUE IMPACT WRENCH**

Customer Rating ★★★★★

**SAVE \$170**

• 700 ft. lbs. Max. Torque

LOT 62627  
68424 shown

**\$7999** comp at \$249.99

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**SUPER COUPON**

**POWDER-FREE NITRILE GLOVES PACK OF 100**

• 5 mil. thickness

**HARDY**

SIZE	LOT
MED	68496/61363
LG	68497/61360
X-LG	68498/61359

Customer Rating ★★★★★

**YOUR CHOICE \$6**

Item 68498 shown

**SAVE 59%**

**\$799** comp at \$14.97

42566743

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**SUPER COUPON**

**4-1/2" ANGLE GRINDER**

LOT 95578/69645/60625 shown

**SAVE 59%**

**\$1199** comp at \$29.97

42564393

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For off-road use only.

ROADSHOCK

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**AWARD WINNING QUALITY**

**\$299.99**  
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**WITH ANY PURCHASE**  
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LOT 90899 shown  
98025/69096

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VALUE

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## SUPER COUPON

**PITTSBURGH**

**6 TON HEAVY DUTY STEEL JACK STANDS**  
LOT 69596  
61197/62393  
38847 shown

**SAVE 50%**

**Customer Rating** ★★★★★

**\$39.99**  
comp at \$79.99

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**9 PIECE FULLY POLISHED COMBINATION WRENCH SETS**  
**Customer Rating** ★★★★★

**SAE**  
LOT 69043/42304 shown

**METRIC**  
LOT 42305/69044

**YOUR CHOICE**  
**\$5.99**  
comp at \$17.97

**SAVE 66%**

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## WOW SUPER COUPON

**MIG-FLUX WELDING CART**  
**Customer Rating** ★★★★★

LOT 69340 shown  
60790/90305/61316

**Welder and accessories sold separately.**

**SAVE 50%**

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## WOW SUPER COUPON

**2 HP, 8 GALLON, 125 PSI PORTABLE AIR COMPRESSOR**  
**Customer Rating** ★★★★★

LOT 68740/69667/67501 shown

**\$99.99**  
comp at \$149

**SAVE \$49**

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## SUPER COUPON

**900 PEAK/700 RUNNING WATTS 2 HP (63 CC) 2 CYCLE GAS RECREATIONAL GENERATOR**  
**NEW**

LOT 60338  
66619  
69381 shown

**SAVE \$68**

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comp at \$168.97

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## SUPER COUPON

**20 TON SHOP PRESS**  
**Customer Rating** ★★★★★

**Pair of Arbor Plates Included**  
LOT 32879  
60603 shown

**SAVE \$215**

**\$154.99**  
comp at \$369.99

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## SUPER COUPON

**4 PIECE 1" x 15 FT. RATCHETING TIE DOWNS**  
**Customer Rating** ★★★★★

LOT 60405/61524  
62322/90984 shown

**SAVE 60%**

**\$7.99**  
comp at \$20.37

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## SUPER COUPON

**MOVER'S DOLLY**  
**Customer Rating** ★★★★★

LOT 60497/93888 shown  
61899/62399

**1000 lb. Capacity**

**\$8.99**  
comp at \$19.97

**SAVE 54%**

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**8 CHANNEL SURVEILLANCE DVR WITH 4 INFRARED CAMERAS**  
**NEW**

**Customer Rating** ★★★★★

LOT 61229 shown  
62463/61624

**SAVE \$140**

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## SUPER COUPON

**26", 4 DRAWER TOOL CART**  
**US-GENERAL**

LOT 95659 shown  
61634/61952

**580 lb. Capacity**

**SAVE \$250**

**\$99.99**  
comp at \$349.99

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## SUPER COUPON

**27 LED PORTABLE WORKLIGHT/FLASHLIGHT**  
**Customer Rating** ★★★★★

LOT 67227 shown  
69567/60566/62532

**SAVE 58%**

**\$2.99**  
comp at \$7.15

**Batteries included.**

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## SUPER COUPON

**HITCH RECEIVER MOUNT FOR WINCHES**  
**Customer Rating** ★★★★★

LOT 69106

**SAVE 50%**

**\$39.99**  
comp at \$79.99

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## SUPER COUPON

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# Diesel Talk

## TDI's Extra NOx and the 2017 Ford Super Duty

TEXT BY ANTHONY ORONA

### VOLKSWAGEN



**V**olkswagen cheated. It's as simple as that. At the end of the day, however, the consequences of Volkswagen's decisions will have a great and problematic impact on the company, the environment, and in one way or another, the entire diesel industry. *Diesel World* readers (especially those who drive Volkswagen) deserve a swift and comprehensive explanation of recent events, and quite frankly, so does anyone who drives diesel. If you haven't digested the story in whole, here's the latest rundown.

#### WHY DID VOLKSWAGEN CHEAT?

We don't know. Either the company couldn't figure out how to pass EPA regulations the proper way, or they didn't care to. What we do know is that TDI engines

as far back as 2009 until present have been rigged to pass EPA inspections despite the fact that they emit 40x the legal levels of NOx and other pollutants into the air.

#### HOW DID VW PULL THIS OFF?

Defeat devices. VW fitted complex, illegal software into its engines that recognizes when the vehicle is under inspection so that it can activate full emissions control, significantly reducing emissions and allowing for the vehicle to achieve a passing test. The EPA called them "defeat devices." However, back on the road, the vehicle is unrestrained, as emissions control is discharged or greatly reduced. The result then is higher fuel economy at the cost of the environment.





## WHAT'S THE DAMAGE TO THE ENVIRONMENT?

As of last, the EPA states that in the U.S. alone, between 10,392 and 482,000 tons of NOx were released into the air by the unrestrained vehicles each year. Worldwide, between 237,161 and 948,691 tons of NOx were emitted each year. NOx can cause both environmental damage and create health risks, and it's estimated that between 12 to 106 deaths could have occurred (related to severe asthma and heart failure) as a result of the extra NOx emitted in the United States.

## WILL VOLKSWAGEN PAY FOR THE DAMAGES?

Absolutely. So far, the company has set aside 7.3 billion to compensate for recalls, lawsuits and fines issued by different parties and nations affected by the 11 million illegally rigged vehicles sold by VW. However, when it's all said and done, VW is going to look at much heftier reparations than 7.3 billion. In the United States alone, the EPA can possibly slap the company with 18 billion worth of fines, or nearly \$40,000 for each VW diesel sold.

## CAN VW AFFORD TO PAY?

That's not certain. When we went to press, VW's market share had plummeted by 50%. However, the company is the largest manufacturer of vehicles in the world and has a reserve of 31 billion in case things get real hairy. Considering the current climate, it looks like VW is going to have to dip deep into the reserve tank.



## WHAT ABOUT VW'S LEADERSHIP? WHO'S RESPONSIBLE, AND CAN THEY FACE JAIL TIME?

CEO of Volkswagen Martin Winterkorn has stepped down, turning in his resignation with an admission of, "Volkswagen needs a fresh start." Winterkorn has accepted full responsibility for the company's present situation but has denied knowledge of the manufacturer's willingness to cheat. Yet, it's highly unlikely that Winterkorn did not know about the defeat devices. Deciding to deceive consumers and officials on a global scale was not a low level call.

In the meantime, Matthias Muller, 62, has succeeded Winterkorn as CEO and has vowed to make the company as transparent as possible. The likelihood that Winterkorn and or the VW executives held responsible for the fraudulent activities will face jail time is not high. History shows

that executive officials have a way of slipping out of all the legal powers' grip at the most opportune times. Winterkorn's decision to step down before investigations deepen was a savvy move.

## WHAT IF I OWN A TDI? WHAT MODELS WERE AFFECTED, AND WHAT SHOULD I DO?

You should do nothing. At least until the EPA releases another statement, the agency's order for now was not to alter anything, in any way. Trying to remove the defeat devices or tampering with exhaust can only worsen the situation and release even more NOx into the atmosphere. The EPA is aware of the nearly 500,000 VW diesels in the U.S. and needs to implement sound and thorough procedures for testing before the recall is issued. The models affected were the Jetta, Beetle, Golf, Passat and Audi A3.

# UNVEILED: 2017 FORD SUPER DUTY



**F**ord just introduced the all-new 2017 Ford F-Series Super Duty as their toughest, smartest, and most capable truck lineup ever. And with the first ever military-grade aluminum alloy body, 16 new class-exclusive features (including seven cameras, complete 360-degree view surrounding the Super Duty and all-new SYNC 3 communication system) along with the 350 lb. lighter body designed for better hauling and towing, sounds like Ford may have some stake to its claim. The diesel option is offered with the 6.7-liter Power Stroke. From the stronger axles, springs and suspension to brand new transmissions and world-class features, the Super Duty was definitely built for hard work. **DW**

- 95 percent high-strength steel offering 24x stiffer than previous frame.
- Military grade aluminum alloy body.
- SYNC 3 communication and entertainment system, featuring: voice recognition, graphical interface, and smartphone-like 8-inch touch screen.
- Blind Spot Information System.
- Lane departure warning/adaptive cruise control and collision warning (when other driver steers too closely, red lights and warning sounds chime).
- Improved towing and payload capability.
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**SOURCE:**  
**Ford Motor Company**





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Cracked transmission tail shaft housings (located between the transfer case and the transmission) are a common problem for GM Allison-equipped 4x4 pick-ups in off-road and drag racing applications. Even a nominal amount of driveline vibration can cause the housing to fail, resulting in a transmission fluid leak or worse; internal transmission and transfer case damage. Once the housing cracks, repairing it requires removal of the transmission and transfer case.

PPE's new Transmission Transfer Case Brace helps support the overhanging, heavy transfer case by spreading the load up and across the adaptor housing to the center section of the transmission.

PPE's Transmission Transfer Case Brace utilizes two 304 stainless-steel 7/8 inch support tubes tied together with a thick 304 stainless-steel plate for increased strength and service life.

Mounting the brace is a quick and easy job that can be done without removal of the transmission or transfer case. No special tools required.



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# Diesel Returns to **INDIANAPOLIS**

*Fleece Performance's Diesel Showdown Gets Loud*

TEXT BY CHRIS TOBIN  
PHOTOS BY CHRIS TOBIN  
AND JADE TOBIN

One of the most coveted titles among racers is the Indy Champion—because if it has wheels—it's likely that a prestigious race for it is held in Indianapolis. With more than a century of racing heritage, the city has played host to some of the biggest racing events and achievements the world has ever known. But racing diesels in Indy looked to be in danger as declining participation and attendance helped prompt a sanctioning body to remove diesel drag races and sled pull events from the 2015 schedule. However, local diesel enthusiasts were upset and fortunately for them, the crew at Fleece Performance Engineering teamed with the newly formed ODSS (Outlaw Diesel Super Series) and the Lucas Oil PPL (Pro Pulling League) to bring diesel motorsports back to Indy on June 27, 2015.







Seth Sullivan's Dodge may not be the quickest truck out of the hole, but it back-halved like no other to take the win.

## THE RETURN OF DIESEL

The Fleece Performance Diesel Showdown featured a full day of diesel activities including: a Show-N-Shine competition, dyno competition, drag racing and sled pulling all located at the famed Lucas Oil Raceway where the NHRA's U.S. Nationals are held annually. A large manufacturer's midway was in

place behind the main drag strip grandstands complete with food vendors and the latest and greatest performance parts and accessories from a broad range of diesel performance vendors.

Everyone was stoked with the diesel competition that was now once again part of the Indy landscape. Plans are already underway for the 2016 edition of

the Fleece Performance Diesel Showdown, so start making plans now as we're sure it will be a killer event for diesel enthusiasts and competitors alike. If you didn't make it to this year's event, look over the next few pages to see a sampling of the diesel fun you missed at the track. Perhaps we'll bump into you next year.



Jeff Dean's slick looking Duramax-powered dragster took home the win in the Pro Dragster class by making consistent passes down the strip.



Aaron Reynolds lifts the front tires off the track as he blasts down the 1320 to take the win in the Pro Mod Class with his Cummins-powered '23 Altered.



Steve Royalty and the Flirtin' With Disaster Pro Mod Dodge is always a sight to see when he leaves the line with the wheelie bars on the ground, the rear tires wrinkled, and the left front tire pulled high in the air.



Jade Tobin got an up close and personal view of Ben Shadday's new 2WD Pro Street drag truck as he got loose and aimed for the wall. Fortunately, he gathered it back up and made it down the track without contact!



The ET Bracket Class final round couldn't have put together two more different yet strangely equal trucks if they tried. Doug Brarens' 2WD '39 rat rod took the win over Braxton Grose's 4WD '02 Silverado.



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A long manufacturer's midway was located behind the main grandstand at the drag strip, where spectators could check out the latest diesel performance parts and get advice directly from industry experts to improve their own trucks.



A huge crowd gathered as they strapped down Dmitri Millard's Chevy in anticipation of his attempt to break through the 2,000-horsepower barrier.



While Millard didn't crack 2,000 hp—1,900-horsepower—sure is impressive even if the truck sprays some coolant in the process.



Here are the Show-N-Shine winners from left to right: Best Dodge, Devin Stenftengel; Best GM, Craig Snider; Best of Show, Dan Toops; Best Ford, Trevor Selinger; Best Big Rig, Corey McCord and Best Custom, Doug Brarens.



Blake Miller (far lane) ran a 12.034 in the final round of the 12.0 Index Class to take the win over Dillon Carter who broke out with an 11.850 in the Dex Brown tribute truck.



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There was plenty of very tight racing throughout the day as can be seen here where Derek Rose (far lane) runs side by side with eventual Pro Street winner Seth Sullivan.



The 10.5 Index final round was another close race with Bruce Block (near lane) taking the win over Lavon Miller by about 0.1-seconds at the line.



Jon Bair took home the 3.0 Class Indy win with his bright orange Cummins-powered classic Chevy.



Adam Hallien took home the Indy win in the 2.6 Class with the longest pull of the night.

## DRAG RACE FINAL ROUND RESULTS

### PRO DRAGSTER

Place	Driver	Vehicle	ET	MPH
Champion	Jeff Dean	'10 RC Dragster	8.580	160.56
Runner Up	Jared Jones	'04 Spitzer Dragster	n/a	n/a

### PRO MOD (1/8-MILE)

Place	Driver	Vehicle	ET	MPH
Champion	Aaron Reynolds	'23 Altered	6.535	116.20
Runner Up	Steve Royalty	1996 Dodge	n/a	n/a

### PRO STREET (1/8-MILE)

Place	Driver	Vehicle	ET	MPH
Champion	Seth Sullivan	'98 Dodge 2500	6.208	132.82
Runner Up	Chase Lunsford	'01 Dodge 3500	7.975	57.99

### 10.5 INDEX

Place	Driver	Vehicle	ET	MPH
Champion	Bruce Block	'04 Dodge	10.513	113.55
Runner Up	Lavon Miller	'04 Dodge	10.605	119.75

### 12.0 INDEX

Place	Driver	Vehicle	ET	MPH
Champion	Blake Miller	'04 Dodge	12.034	111.00
Runner Up	Dillon Carter	'06 Dodge 2500	11.850	107.71

### ET BRACKET

Place	Driver	Vehicle	ET	MPH
Champion	Doug Brarens	'39 Rat Rod	11.645	99.55
Runner Up	Braxton Grose	'02 Silverado	11.577	111.01

## DYNO RESULTS

Place	Name	Year	Make	HP	TQ
1	Dmitri Millard	2003	Chevrolet	1901.5	2262.9
2	Dex Brown	2006	Dodge	1030.0	1720.1
3	Doug Hardin	2012	Dodge	951.1	1458.3
4	Zack Danner	2006	Dodge	900.5	1559.0
5	Devin Stenftengel	2012	Dodge	829.9	1279.2
6	Kyle Plogger	2007	Chevrolet	736.7	1226.2
7	T.J Sagami	2006	GMC	730.4	1298.9
8	Andrew Gordon	1997	Dodge	712.6	1250.9
9	Chris Thomas	2006	Dodge	685.6	1274.9
10	Dustin Lord	2008	Ford	665.4	1125.4



Looks can be deceiving—Chase Lunsford (near lane) got out to a good lead in the final round of the Pro Street Class, but Seth Sullivan drove around him to cross the stripe first and take the win.



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The 7.3L Power Stroke called Relentless driven by Rob Thurow finished in third place in the 3.0 Class despite spraying oil all over the place.



Kent Crowder drove the Scheid Diesel Dodge to the win in the Super Stock Class pulling during one of the brief sunbreaks we got through the evening.



Dalton Tarr's Twisted Metal First Gen Dodge always looks great on the track, but tonight he didn't have enough for the competition and finished outside the top-five.



Matt Clemons' Alter Ego truck is always a crowd favorite, especially among the younger fans. He finished in fifth place in the Super Stock Class.

## TOP 5 SLED PULL RESULTS

### SUPER STOCK DIESEL TRUCKS

Place	Vehicle	Driver Name	Brand	Distance
1	Scheid Diesel	Kent Crowder	Dodge	299.50
2	On Borrowed Time	Shawn Hodges	Dodge	298.84
3	Against The Grain	Cody Shay	Dodge	292.12
4	Rock Hard Ram	Van Haisley	Dodge	291.87
5	Alter Ego	Matt Clemons	Dodge	290.18

### 3.0 Diesel Trucks

Place	Vehicle	Driver Name	Brand	Distance
1	Grin N' Bair It	Jon Bair	Dodge	312.54
2	Penn Farms	Matt Penn	Dodge	307.69
3	Relentless	Rob Thurow	Ford	306.82
4	Sound Of Madness	Josh Bowers	Dodge	306.63
5	Old Skool	Jared Cox	Ford	305.72

### 2.6 DIESEL TRUCKS

Place	Vehicle	Driver Name	Brand	Distance
1	Wrecker	Adam Hallien	Dodge	336.20
2	The Crippler	Joshua Land	Dodge	335.11
3	Burleybilt	Tyler Eller	Dodge	331.49
4	Cory Hesson Truck	Cory Hesson	Dodge	328.65
5	The Durt Gobbler	Joe Hill	Chevy	327.04

### SHOW-N-SHINE RESULTS

**Best of Show:** Dan Toops

**Best Big Rig:** Corey McCord

**Best Custom:** Doug Brarens

**Best Dodge:** Devin Stenftenagel

**Best Ford:** Trevor Selinger

**Best GM:** Craig Snider

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Joshua Land drives his truck with hand controls, but that doesn't hold him back in the least, as he finished in 2nd place just over a foot off the lead in the highly competitive 2.6 Class.



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2011-2015 6.7 Powerstroke



2003-2007 5.9 Cummins



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2015 Chevy 2500HD







BY PHILLIP DAYTON

**I**t all started out when Josh White opened a business named Arkansas Direct Auto dealership in Conway, Arkansas. The business started out selling late-model 4x4 trucks to their clients but slowly started moving towards lifted trucks as its main inventory. Then, after buying lifted trucks for six to seven months, Josh decided that they'd start lifting their own trucks in house. So, lifting became their new passion, and it freshened up the business.

In January 2014, Josh opened up the shop for the general public and named the business ADA Offroad. ADA Offroad is a full-service facility in Conway, Arkansas, where you can either purchase a completely built and lifted truck, or you can bring in your own truck and have them lift it for you. While showing off their talents last summer, Josh attended a local car show where he saw some built trucks that came from Texas. This gave him the spark that started the plan: He could build a show-winning truck, bigger and better than what had been in attendance at this show. The challenge was on.



The remote reservoir King 2.5 performance shocks on the front of this rig will help dampen any road it encounters—paved or not.

## FROM CONCEPT TO REALITY

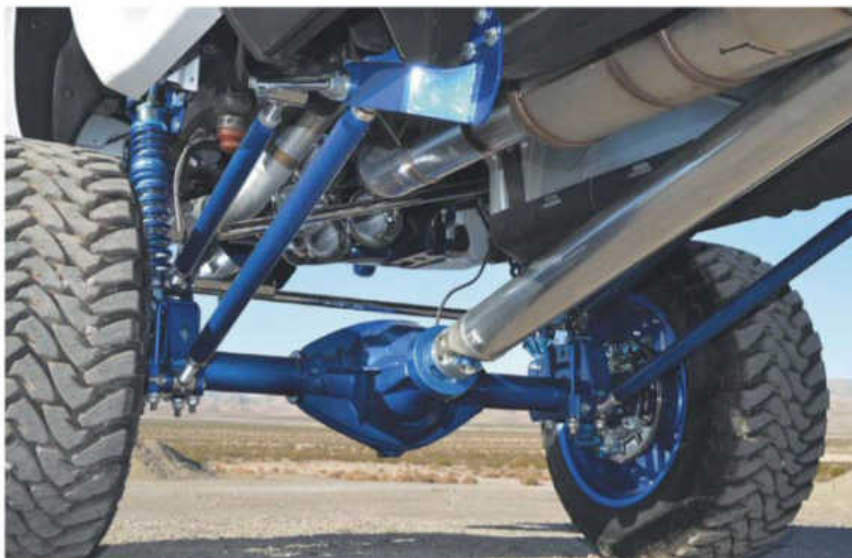
He began by contacting Robbie Bryant and Brian Fields at Keg Media, who created a rendering from Josh's concepts for this SEMA truck. Getting it from the mind and onto paper for a great rendering is their specialty—it's sort of like mind reading. After purchasing a 2015 Chevy 2500HD in late September 2014, the build was on for Josh and his build team, which included Even Pettit and Brandon Rodgers; they had just a month to finish the truck to be at the SEMA show.

Since the truck was new and Josh was going more after the show look in a short

time, he left the engine and transmission stock. He did open up the exhaust though by removing the stock exhaust and installing a MagnaFlow bolt on kit. He also replaced the stock diff cover and transmission pan with Mag-Hytec units. These he had Snyder's Customs powdercoat in blue for the truck's planned color scheme.

## BIG LIFT

For the first modification, he contacted James Bertao at Full Throttle Suspension and asked him what they had for the new 2015 Duramax. He found out they were working on a new 15-inch lift with a rear 4



The 4 link in the rear adds more travel, helping this rig during dynamic driving conditions.



The Hammerhead Armor bumper on the front with the Monster hooks add to the tough look of this rig.



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# RIDE WHITE



link. So, the build started with the addition of a 15-inch Full Throttle suspension lift kit, with King coil over springs in the rear and King 2.5 pure race coil over shocks, along with adding the Full Throttle rear 4-link. For the front, he replaced the stock shocks with King 2.5 performance remote reservoir shocks. The complete lift kit and 4-link were also powder coated blue by Snyder's Customs in Arkansas. While doing these modifications, Josh also replaced all the brake lines with stainless steel braided lines for the added look and off-road durability.

After completing the lift, he needed to add new tires and wheels. He went with the American Force 24x16 2-piece Brawler wheels front and rear and installed 40x15.50x24 Open Country M/T Toyo tires all around. This is a big tire package, but with the 15-inch lift, it was a perfect match for the monster-truck-style look.

## TOUGH LOOK

To add to this tough look, he removed the stock bumpers, and for the front, he installed a Hammer Head Armor pre-runner bumper. Then he installed a custom

grille insert designed by KEG Media and built for him by Luis Reyes from Gravel Empire custom. For the rear bumper, he also decided to go with the Hammer Head Armor unit. The bumpers and grille were custom painted by Maurice McClure. The Monster hooks and hitch that add to the overall effect of this truck were powder coated in blue by Snyder's Customs. For the truck bed, he unfurled a Bed Rug for a finished bed look. The bed also has a pair of swing cases for storage along with an Under Cover bed cover to top it off. For the outside, he added the Amp Research power steps to assist in getting in the rig.

For lighting, he replaced the stock headlights with plainANsimple headlights with color shift oracles and used Rigid R1s for the high beams. For the taillights, he used the Go Recon tail lights—also rebuilt by plainANsimple. As if that wasn't enough lighting for this rig, he also added OffRoad LED bars all over, using two 50-inch curved bars on the roof, one 20-inch bar in the front bumper, four 3-inch cubes in the front bumper, six 3-inch cubes under the truck and in the fenders for clearance lighting, and finally, two 10-inch







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American Force Brawler MP wheels and Toyo Open Country M/T tires.

single row bars in the grille. Now this truck can light up any place it's at, day or night.

For the finished look, he had Maurice McClure paint the door handles, mirrors and drop sill moldings to match the truck paint. Then, for the glass, he went with 15-percent tint. The final finish to this rig was the addition of the Horn Blaster Admiral Marine chrome horns hidden under the front end. It is powered by none other than a VIAIR compressor feeding a 1.5-gallon tank that was also powder coated blue at Snyder's Customs.

The truck was finished in less than 30 days. The build crew had many late nights, but in the end, they pulled it off. Saturday night before the SEMA show, it was de-tailed by Killer Wax in Las Vegas before joining the competition in the outdoor American Force booth. This truck was a crowd pleaser at the SEMA show, and since going home, has also been a great daily driver for Josh to cruise around Conway. It is the perfect tool to show off the talent for building show trucks at ADA OffRoad. **DW**







The BedRug, SwingCase's and Under Cover LUX Tonneau Cover add the final clean look with protected storage for this show rig.



The chrome Admiral 540 Train Horn Kit from Horn Blasters, with air tank and VIAIR compressor to charge the system.





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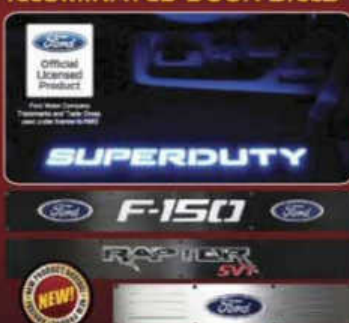


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# Porsche Schelpper

## 1959 Porsche-Diesel Standard Model

TEXT BY JIM ALLEN  
PHOTOS COURTESY OF  
AUCTIONS AMERICA/HUGH HAMILTON PHOTOGRAPHY

**F**erdinand Porsche (1875-1951) had his hands into just about everything with an engine. By the time he started his own engineering firm in 1931, Dr. Porsche had acquired a great deal of motor vehicle engineering experience. His interest in tractors predated WWI, but he didn't work on a serious design until 1934, when three prototypes were produced. By that time, Porsche had gained some prominence while developing the Volkswagen automobile; it was so well accepted that the project yielded an additional charge from the Reich: the Volksschlepper, or the people's tractor. The Schlepper was project number 111 with the Porsche firm, and some of the other project numbers with which you might be familiar are 356, 911, 914, 924, 944 and 928.

### AIR COOLED DIESELS

The first Porsche tractors were very simple designs with a fluid clutch and air-cooled V-2 gasoline engines, but by the time they were ready for production, the war had taken over most of German industry, and like the civvy Volkswagen, not much happened. After the German defeat, the Allied Occupation Government tried to convert Germany to an agrarian

society (well, that didn't work, did it?) and the manufacturing of agricultural products was pushed hard. As a result, many war-ravaged firms saw agrarian manufacturing as a way to get back on their feet. Meanwhile, Dr. Porsche himself was being held in a French prison for alleged war crimes.

One of the main things to come out of the tractor projects was the type 313 air-cooled diesel,

the design of which was complete by 1945. At the end of the war, Porsche's company was in disarray, but Dr. Porsche's son, Ferry, held it together and finished the development of a tractor, among other things. By 1949, the elder Porsche had been released from prison and helped finalize a deal with Allgaier, an Austrian agricultural manufacturing company, to build the Porsche tractors under



The Standard Model 218 tractor was built starting in July of 1958 and continued into June of 1960 when it was replaced by an updated version in three possible configurations. Rated by the manufacturer at 25 hp, it featured three standard PTOs, two in the rear (540 and 1000 rpm) and a center pulley-type PTO for a belly mower. The red color is correct for this era, but we are told by Porsche tractor expert Roland Lohnert that the yellow accents came only for 1962. The wheels and seat should be a cream color for this year.



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## “ABOUT 1,000 MANNESMANN-BUILT PORSCHE-DIESEL TRACTORS WERE SOLD IN NORTH AMERICA”

license. The new design sold well and funds were rolling into Allgaier and Porsche's bank accounts.

A big upgrade in 1952 yielded the Porsche System tractors, like the model A-111 you saw in Tractor Talk back in 2008. The Porsche air-cooled diesel had been substantially revised by then, and the tractor upgraded with new hydraulics and other modern features. Despite generally good sales, Allgaier decided to move away

from tractor manufacturing in 1955 and sold the Porsche licenses and their tractor factory to Mannesmann AG, who built the same tractor in 1957. That year, with some further technical upgrades, the slightly restyled tractors were rebranded Porsche-Diesel. By 1958, the tractors had undergone further revision, been given new designations, and the greatly expanded production included the 14-hp 1-cylinder Junior; 25 hp 2-cylinder Standard; 38-hp Super 3-cylinder; and the 50 hp Master 4-cylinder.



The Porsche-Diesel Standard isn't a big tractor but was designed to be versatile. It was an adjustable tread tractor, with a wheel track spacing adjustable from 49 to 73 inches. If the front wheels look familiar, think Volkswagen. The tractor used a five speed manual from ZF and had reduction gears in a portal style final drive. One of the unique features in the Porsche-Diesel tractor was a hydraulic coupling. It operated much like a torque converter, and you only needed the foot clutch for gear changes. The hydraulic coupling provided a load-sensing device that worked as an automatic torque amplifier. Wheel weights were available, but we don't have specs on what was the maximum amount for the Standard. They also used liquid in the tires.



Though a rear three-point hydraulic lift was technically optional, it was so common in the U.S. imports that you could say “every one” had it. This one is missing its lower arms and links but has the adjustable hitch. For the Standard, the lift was a Class II and rated for about 2,800 lbs. The specs say this tractor was rated for a 2-14 mouldboard plow. When you look at specs for the four Porsche-Diesel tractor models, the plow rating is tied directly to the number of engine cylinders, in this case: two bottom for two cylinders. The hoop-like device on the rear fender is the passenger seating area. Not comfortable, but secure.

### MODULAR DESIGN

The engines were all based on a modular design with a 50.15 ci cylinder that could be configured for one to four cylinders (and likely more if desired). They were directly injected, and each head and cylinder was separate and identical, so there was a lot of parts to interchange. Air-cooled diesels were fairly common in Europe at the time, with several companies producing them. Deutz is one very similar modular diesel, and it's similar enough to wonder whose design influenced whom.

### NORTH AMERICAN INTRODUCTION

Sales of the Porsche-Diesel tractors were very good in Europe, and it was decided to begin marketing them in North America. After a few independent sales by a dealer in Connecticut, American Porsche Diesel Corporation was set up in Easton, Pennsylvania, and sales began here in 1959. It was a modest success here, but worldwide, Porsche-Diesel tractor sales began lagging when the market became saturated by too many brands. In 1963, Mannesmann decided to move into other areas of manufacturing and by January of 1964, their factory was making tank engines for NATO, and the last few

#### SOURCES

**AUCTIONS AMERICA**  
AuctionsAmerica.com

**PORSCHE DIESEL NORTH  
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Porsche-Diesel.com

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The Porsche air-cooled diesel was direct-injected and modular in design. Until a displacement increase in 1961, each cylinder displaced 50.15 cubic inches and the crankcase could be configured for one to four cylinders. Many parts interchanged between each engine. Each cylinder produced approximately 13 hp. Needless to say, Bosch supplied the PF pump and injectors.

tractors were assembled from parts in the parking lot.

It's estimated about 1,000 Mannesmann-built Porsche-Diesel tractors were sold in North America, about 700 in the USA and 300 in Canada. The best sellers in North America were the Junior and the Master because they boasted features standouts in their classes and fit the market best. They all had a solid and economical powertrain, three PTOs (two rear and one center) a good hydraulic system and a diff lock. The European tractor model didn't always work here, but the Porsche

tractors were close enough to have a shot at it. It isn't clear how successful Porsche tractors could have been here, but it's clear they didn't get the full-shot opportunity.

Two Porsche-Diesel tractors were tested at the University of Nebraska test lab in 1959: the single-cylinder Junior and the three-cylinder Super. The Junior was rated at 11.29 PTO hp, produced up to 9.58 drawbar hp and delivered 2,482 lbs. of pull at maximum ballast (800 lbs.). The three-cylinder Super delivered 37 PTO hp and up to 33.4 drawbar hp with a maximum of 6,411 lbs. of pull with max ballast (3386 lbs.). The two-cylinder Standard would've likely performed somewhere in the middle of those two



The air-cooled engine had a robust fan that is directly driven by the engine. The shroud directs air over the cylinders and oil cooler. The cooling system was designed for easy cleaning. The lights and horn were common features found in the European market, but the info we have is that they were not included on the North American models. That could indicate either this tractor originated in Europe, or the owner/restorer dressed it up with Euro-style accoutrements.



Like many '50s tractors, the dash is typically austere. The horn and turn signal add to the complexity. If the hour meter is original, this tractor only had 4,058 hours at the time of sale. The hinged cover below is a storage compartment.

benchmarks, likely in the 20 PTO hp range.

From the start of production by All-gaier to the last units built by Mannesmann, some 125,000 Porsche-licensed tractors were built. Iseki in Japan also got a license to build Porsche tractors, but their units were a considerable departure and appeared only to use some of the technology rather than the entire design.

The 1959 Standard you see in these auction glamour shots sold in 2014 for \$19,800 at an Auctions America sale. The high price most likely has to do with the Porsche name, a majority of them finding homes with Porsche collectors with deep pockets. We've been told there are about 1,500 Porsche tractors of all types and eras in the U.S. Many of them were imported from Europe by Porsche collectors. For all the glitz and glamour associated with the Porsche name, these tractors were contenders in their respective markets based off their own merits. No doubt, they're the slowest things to ever wear the legendary Porsche name, but they certainly live up to the quality associated with Porsche. **DW**

#### TYPICAL SPECIFICATIONS

### 1959 Porsche-Diesel Standard Model 218

<b>ENGINE:</b>	2-cyl. OHV diesel, air cooled
<b>DISPLACEMENT:</b>	1.8L (106.8ci)
<b>BORE &amp; STROKE:</b>	3.84 x 4.56 in
<b>ADVERTISED POWER:</b>	26 hp @ 2300 rpm
<b>COMPRESSION RATIO:</b>	19:1
<b>TRANSMISSION:</b>	5-speed, ZF
<b>TIRES:</b>	Front- 5.50-16 Rear-12.4-28
<b>WEIGHT:</b>	2,513 lbs
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## Knock Knock

Hi Jim,

My 6.5L diesel engine has just developed a knock. I installed a new harmonic balancer, changed the valve cover gasket on the driver's side and added a new pump driver module that was relocated on top of the intake manifold. When I had the cover off, I checked the valve train because Cylinder 7 seems to be the noisiest, but it all looks good. I'm thinking that the compression on 7 is a bit low. But it runs really well, and, yes I may be looking at a rebuild soon, but hopefully not just yet.

So, in further effort to find the knock, I have checked the flex plate bolts and removed the serpentine belt. I have listened to various related engine components with a stethoscope, and the only place I can hear the knock is on the injector lines - not the pump and not on the injectors.

What is interesting about this knock is that you can hear it really well from inside the cab with the windows up, but not when you are around the engine. In fact, it's hard to hear this knock when standing in front of the vehicle with the hood up.

**Carlos Valdes**  
**Mesa, Arizona**

Hi Carlos,

A diesel combustion knock can sound very much like a mechanical problem. To learn whether what you're hearing is due to diesel combustion or if the sound you're hearing is due to a mechanical failure, you can perform the following test: (NOTE: Do NOT do this procedure on a common rail engine.)

If you suspect #7 is the source of the knock, loosen the fuel injector line fitting on the #7 injector. Fuel will weep at the loosened fitting while the engine is idling, and that cylinder won't fire.

If the sound goes away when the fitting is loosened, you have a "fuel knock." A new injector would likely solve the problem. However, I'd replace all 8 if you can.

On the other hand, if the knock remains essentially unchanged when loosening the injector fuel line fitting, the problem is mechanical in nature (lifter, rocker, valve or piston, etc.).

Incidentally, there appears to be a good deal of injector pop noise in the injector fuel line, as you were able to hear with a mechanic's stethoscope. If an aluminum heater coolant line rests against a steel injector fuel line, that "pop" noise will be transmitted into the cab via the coolant. So, make sure nothing is touching the steel injector fuel lines. Good luck, and let me know what develops.

## Newer Truck Smoke?

Jim,

I currently own a 2005 Chevy LLY Duramax, but I'm looking forward to buying a newer style used truck. Do the 2007 or newer style trucks have any advantage or disadvantage over the classic styled trucks? I have experienced out-of-warranty injector replacement, and I don't want to go through that again for quite a while. Please let me know what you'd consider when looking at a newer truck.

P.S. I've heard that someone makes a programmer for the newer GM Duramax that has a specific tune just to blow smoke. Have you ever heard of this?

Thank you,

**Kyle Keyes**  
**Hanford, CA**

Kyle,

Since the 2006 model year, the GM trucks have been equipped with the tap-shift 6-speed double overdrive Allison automatic. This is a significant improvement over the earlier 5-speed Allison (though the original 5-speed is still a great automatic transmission).

The new 2007+ GMT900 body style GM trucks are quieter, ride better and offer more luxurious interiors. Opinions on preference opinions are split on exterior styling. Those that I've driven seem more refined and are quieter when compared to the earlier trucks.

Regarding smoke—our advice is—don't add any device or programming that increases smoke if you intend to drive the truck on the street. Yes, programming is likely available that will "over fuel" to a point of producing smoke. Late model trucks that have been modified have had the original Diesel Particulate Filter (DPF) removed and the DPF related programming eliminated from the ECM. Most use some variation of a program for a track only/off-road only truck. The EPA is getting serious about smokers. And, we all need to do our part to make diesel vehicles popular with the public.

The EPA can make a smoker's life miserable if they want to make them an example for tampering with the factory emissions equipment, especially in California. And lastly, any emissions system tampering will surely void the truck's engine/powertrain warranty.

## Electric Fan, Cooler A/C, More Power, and Better Fuel Economy?

Hey Jim,

So, I eliminated the engine-driven fan from my 6.2L diesel Suburban and installed a huge electric fan from an Oldsmobile Silhouette Minivan that was equipped with dual A/C (a high heat load application). I wired the fan with a redundant heat control and separate circuit for the A/C. The results are phenomenal! The fan kicks in at 195 degrees (a secondary "backup" temp switch calibrated to 210 degrees also works as a backup) and cools the engine to 185 degrees before shutting down. The fan also runs continuously with the A/C on.

The result? On a 95-degree day, the engine never broke 200 degrees, whether driving or sitting in gear with the A/C blasting. I simulated the worst case scenario by parking nose first into the sun in the local Wal-Mart parking lot between two parked vehicles with another one directly in front of me (to limit air circulation) and idled in gear with both A/C units blasting for 15 minutes, and the temperature hovered at 185 degrees. In driving without the A/C on, the fan doesn't even need to run, and the temperature seldom rises to 195 with the fan off at a traffic light, unless it's a very long wait. One of the best features, however, is the fact that 0-60 times were reduced by 5.4 seconds. I ran three



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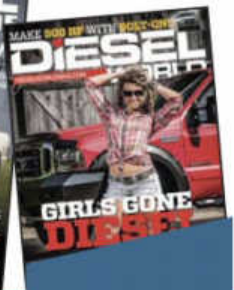
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back to back 0-60 runs of 17.4, 17.8, and 17.5 seconds for an average of 17.6 seconds 0-60. The previous best time was 23 seconds flat. The engine seems so much more responsive, even while cruising in overdrive.

I can't wait to calculate my fuel mileage now with the electric fan setup. Also, A/C temperatures are much cooler now with a vent temperature of 38 degrees at idle in gear (during the 15 minute "Wal-Mart" test). The A/C would only approach those temperatures previously when cruising at 35 MPH or better before the electric fan swap. I know this might not be the ticket for everyone, especially those who tow heavy loads up steep grades. But for those of you who are only using your rig to commute, travel, or do light hauling work, this might be a setup worth trying. I am only into the experiment for about \$65, and that includes the fan (\$10.00 at the local wrecker) \$38.59 for the Hayden adjustable thermostatic control, \$15.00 for the non-adjustable temperature switch (200 degrees on 185 degrees off) from Summit, and some solder, heat shrink wire (22 gauge for the sensing and relay control, 10 gauge for the high current circuitry) and two automotive relays (swiped from a Ford Crown Victoria during a junk yard raid some months back). The wire and supplies were items I already had on hand. I have heard the horror stories of insufficient cooling with electric fans, and that may hold true for heavy tow applications, but for me, it seems to have addressed the heating issues at idle, and that terrible mid to high RPM sluggishness I had been experiencing.

**David Borrelli**  
Milford, DE

Hey David,

Thanks for that informative report. It's been suggested that a diesel pickup's engine-driven fan can absorb up to as much as 20 hp in a worst-case situation (high engine speed and engaged fan-clutch). If I were building a fuel economy rig used for commuting or traveling, or a dedicated race truck, I too would use an electric fan or fan pair. The Flex-a-Lite branded aftermarket electric fan pair that's made for current GM/Ford/Dodge diesel pickups is advertised at pulling about 5500-6000 CFM. The stock engine-driven fan can pull up to about 10K in a high rpm situation, so the en-

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gine-driven fan remains the best choice when hauling heavy loads in high summer temperatures. Most heavy-haulers would rather lose 10% of the available power to the fan than lose 100% due to overheating.

Another consideration is current draw. An electric fan system will draw 30-50 amps (or more) when running. This will push a stock alternator to its limit on a good day and will overstress it at night (with lights, A/C and the fan). So, a good high-output single or dual alternators might be a good choice for long-term reliability. **DW**

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- Security and protection from the elements
- Aluminum frame with tear-resistant double sided marine-grade vinyl
- Industry leading 10 year warranty on vinyl, lifetime on frame

### TONNO PRO LO-ROLL TONNEAU COVER ►

- Easily rolls and unrolls for full access to your truck bed
- Mounts inside bed rails so you can mount ladder rack, bike rack, etc.
- Aluminum frame with tear-resistant double sided marine-grade vinyl
- Installs in minutes – NO DRILLING required!
- Security and protection from the elements
- Industry leading 10 year warranty on vinyl, lifetime on frame



EACH TONNEAU INCLUDES 4 FREE GIFTS!



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Premium Style. Lasting Performance.

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- Plant your feet on Lund 5" Oval Nerf Bars for a big-time boost in and out of your rig
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- Backed by a Lifetime Warranty

**"Easy install and they look the best" ★★★★★**

*These came to me in less than a week after ordering. Installation took around 40 mins and they look outstanding on my truck. So much better than the 3-inch round bars normally seen in this price range." - Steve A. (Spring Creek, NV)*

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# NITTO<sup>®</sup> GRAPPLERS<sup>™</sup>

MAKE EVERYDAY AN  
**ADVENTURE**

## TERRA GRAPPLER<sup>®</sup> G2

The Terra Grappler G2 is Nitto's next generation all-terrain light truck tire specifically designed to meet your everyday on and off-road adventures. Whether you're commuting to work, towing a trailer or headed up your favorite mountain trail, the balanced off-road and on-road performance of the Terra Grappler G2 will get you to your destination.

Featuring a distinctive tread pattern, a brand new compound, and improved internal construction, the Terra Grappler G2 offers increased treadlife\* and true all-terrain capability.

\*Comparison against the original Nitto Terra Grappler.

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TREADWEAR  
WARRANTY**

**50K & 65K**

FOR LT METRIC SIZES

FOR HARD METRIC SIZES

See Nitto Tire's warranty manual for full terms and conditions

